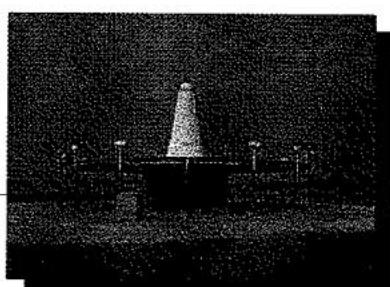
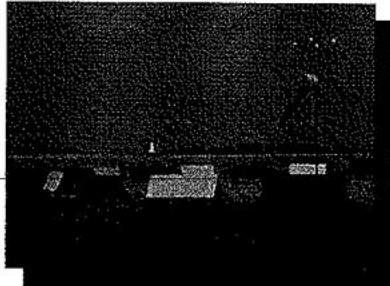


Report

Nebraska Historic Buildings Survey

General Aviation in Nebraska



Prepared for:

**Nebraska State Historical Society
State Historic Preservation Office**

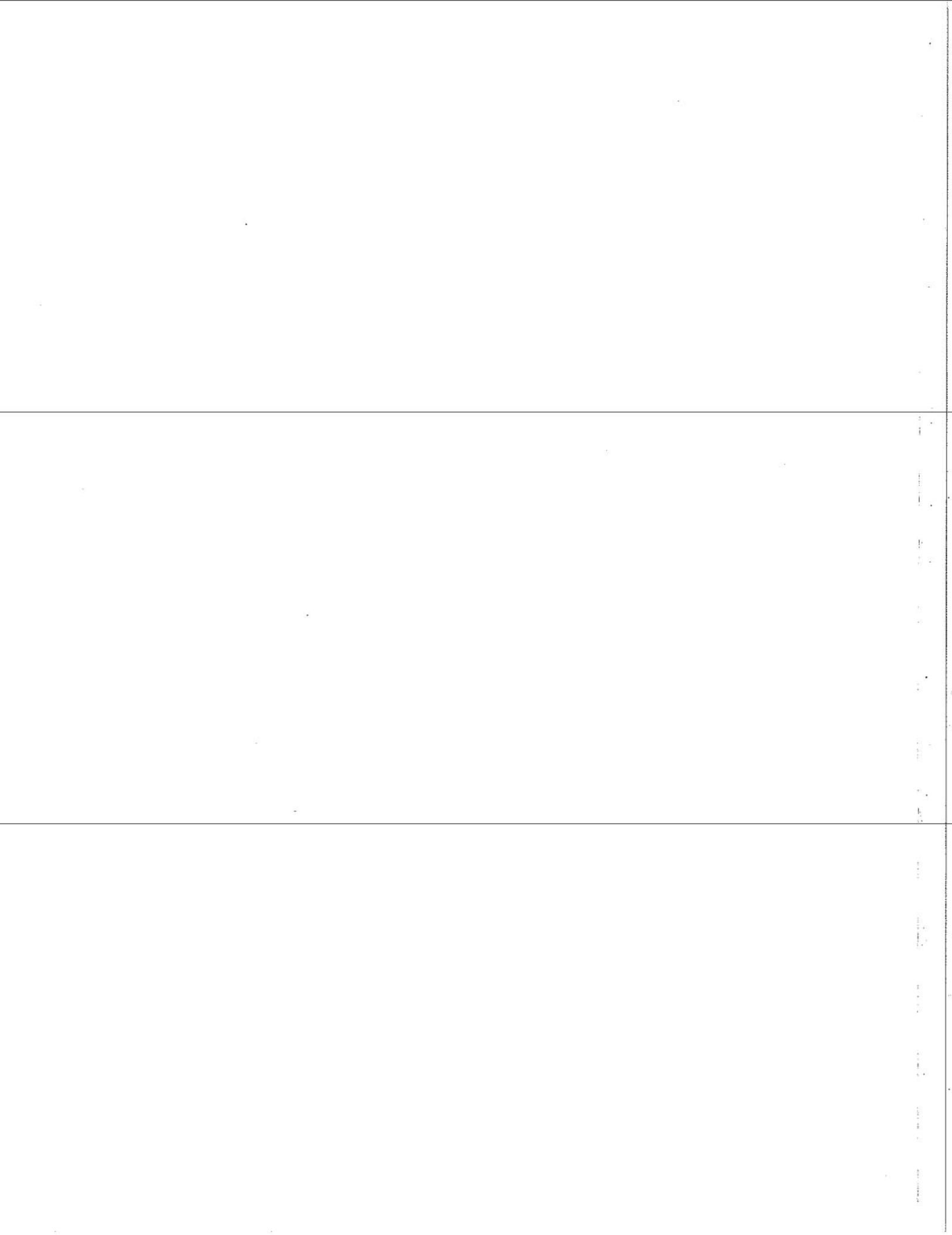
and

Nebraska Department of Aeronautics

Prepared by:

MEAD & HUNT
ENGINEERS
ARCHITECTS
SCIENTISTS
PLANNERS

*Madison, Wisconsin
May 2001*



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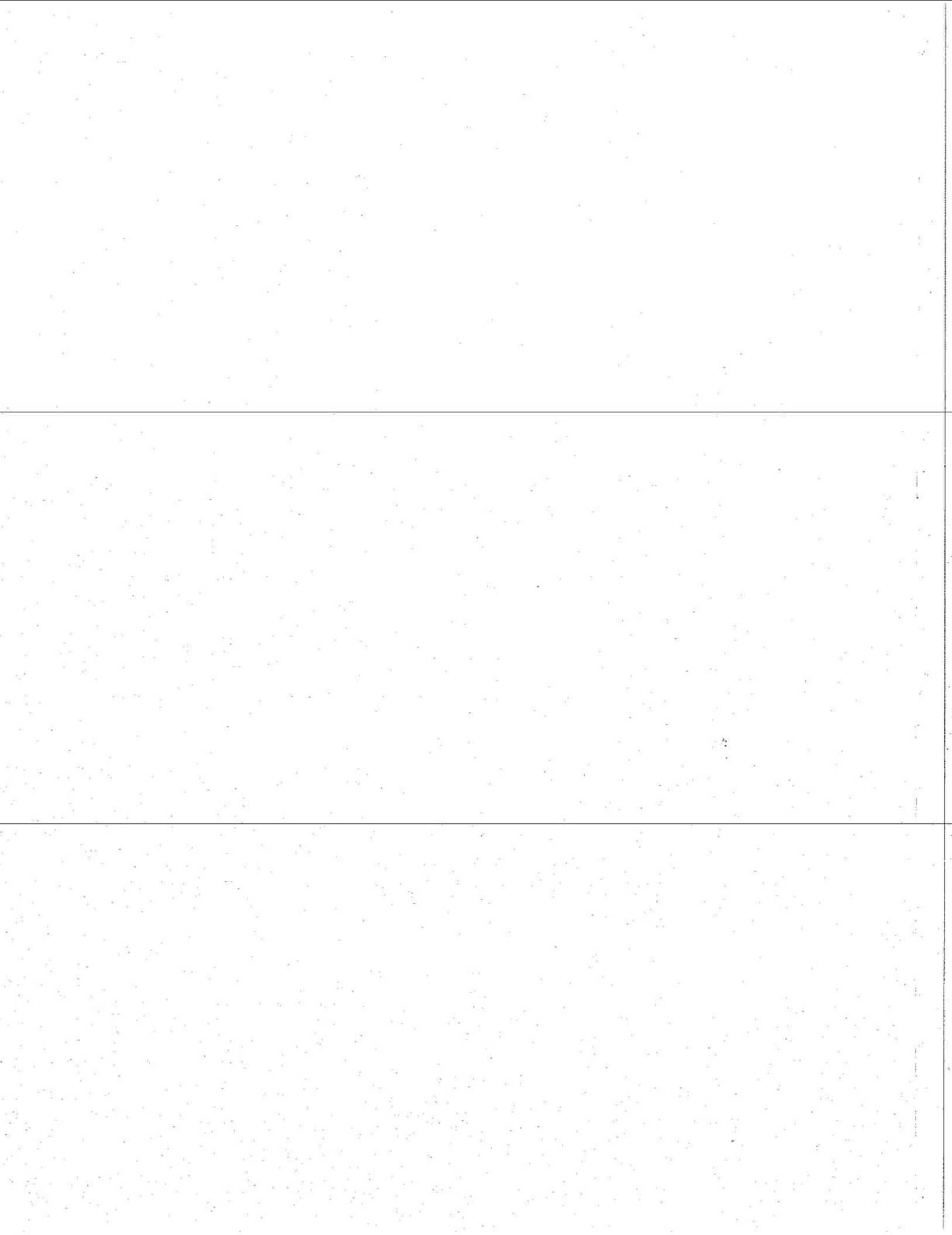


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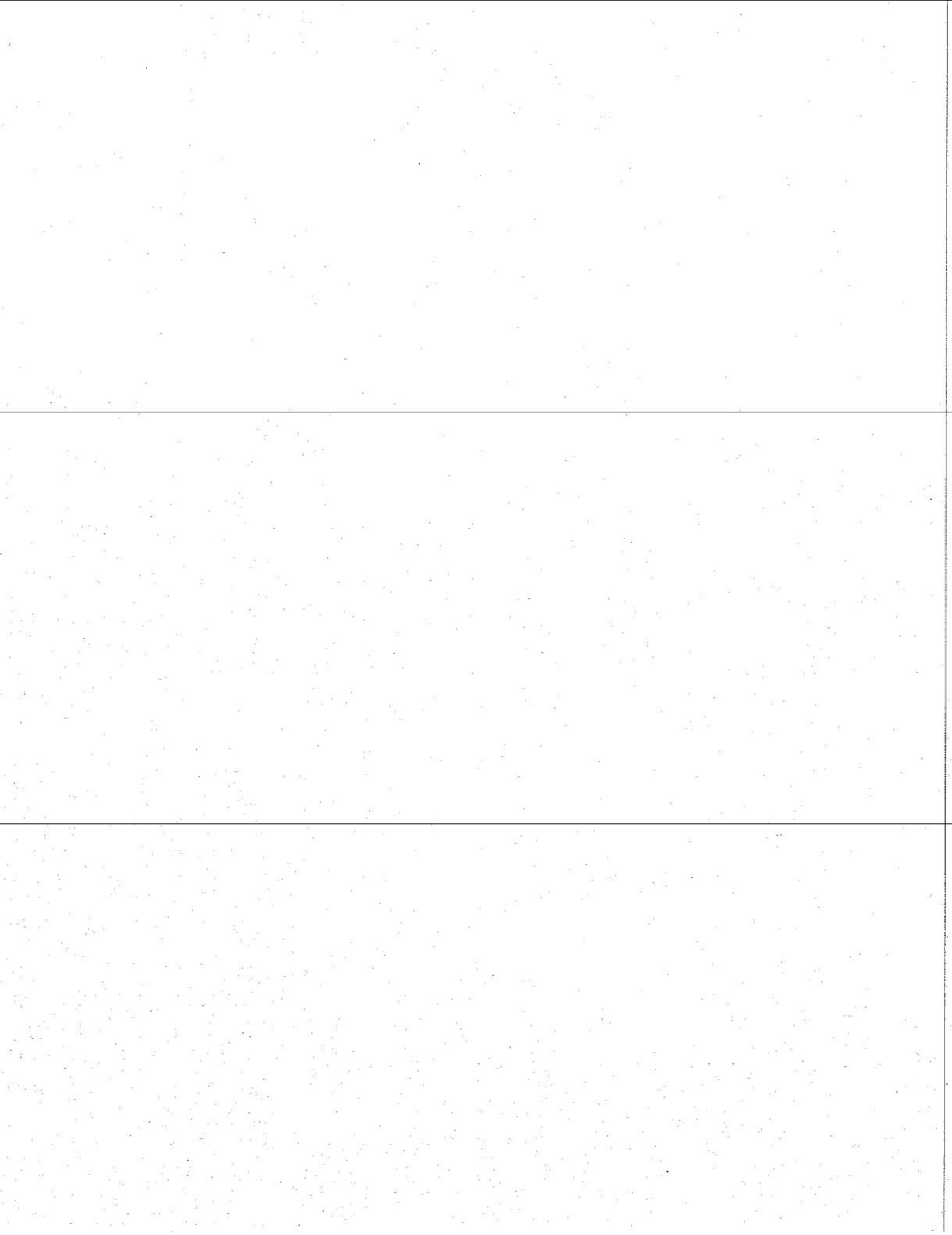
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Executive Summary

The Nebraska State Historical Society (NSHS) and the Nebraska Department of Aeronautics, in cooperation with the Federal Aviation Administration, entered into an agreement to conduct a two-phase project, focusing on aviation development in Nebraska. The NSHS contracted with Mead & Hunt, Inc., to complete Phase I of the project. This report encompasses the four work components of Phase I, including:

Development of a historic context for Nebraska general aviation development c. 1907-1960

Sample field survey, inventory, and evaluation of four Nebraska airports – Beatrice, Hastings, Norfolk, and North Platte.

- National Register of Historic Places (National Register) nomination for the Norfolk Administration Building.
 - Strategy and recommendations for Phase II field survey of airports.
-

Historic Context Development

To develop the historic context and gather data on each of the field survey airports, Mead & Hunt completed research at the NSHS, the Nebraska Department of Aeronautics, and the University of Nebraska – Lincoln. Resources such as standard plans, airport layout plans, annual reports, and correspondence files in the collection of the Nebraska Department of Aeronautics were particularly helpful in developing this historic context and completing the sample field survey. Historical information, including plans and airport histories, was also gathered at each of the local airport facilities.

Sample Field Survey

Mead & Hunt conducted a sample field survey of four airports identified by the NSHS. A total of 39 resources were identified and assigned Nebraska Historic Buildings Survey (NeHBS) site numbers. Historic resources at each of these airports were first evaluated collectively for their potential to contribute to a historic district. At this time, one potential historic district has been identified. Buildings and structures were also evaluated individually for National Register eligibility applying *Criterion C: Architecture* and *Criterion A: Events*. Two individual resources are recommended as potentially eligible for the National Register. Four resources are recommended to be reevaluated when they reach the 50-year age requirement. Continued field survey of airports and documentation conducted during Phase II will offer additional guidance on the evaluation of significance and integrity for aviation-related resources.

National Register Nomination

Field survey activities at the Norfolk Airport included photographic documentation of the administration building and research to document the history of the building. A National Register nomination has been prepared and submitted for the Norfolk Administration Building.

Phase II Survey Recommendations

Phase II of the project will be a statewide field survey of additional general aviation facilities. Mead & Hunt conducted telephone interviews of approximately 29 municipal airports established before 1961 to identify facilities that have retained historic buildings or structures. Ten airports are recommended as priorities for Phase II field survey. These airports contain a concentration of

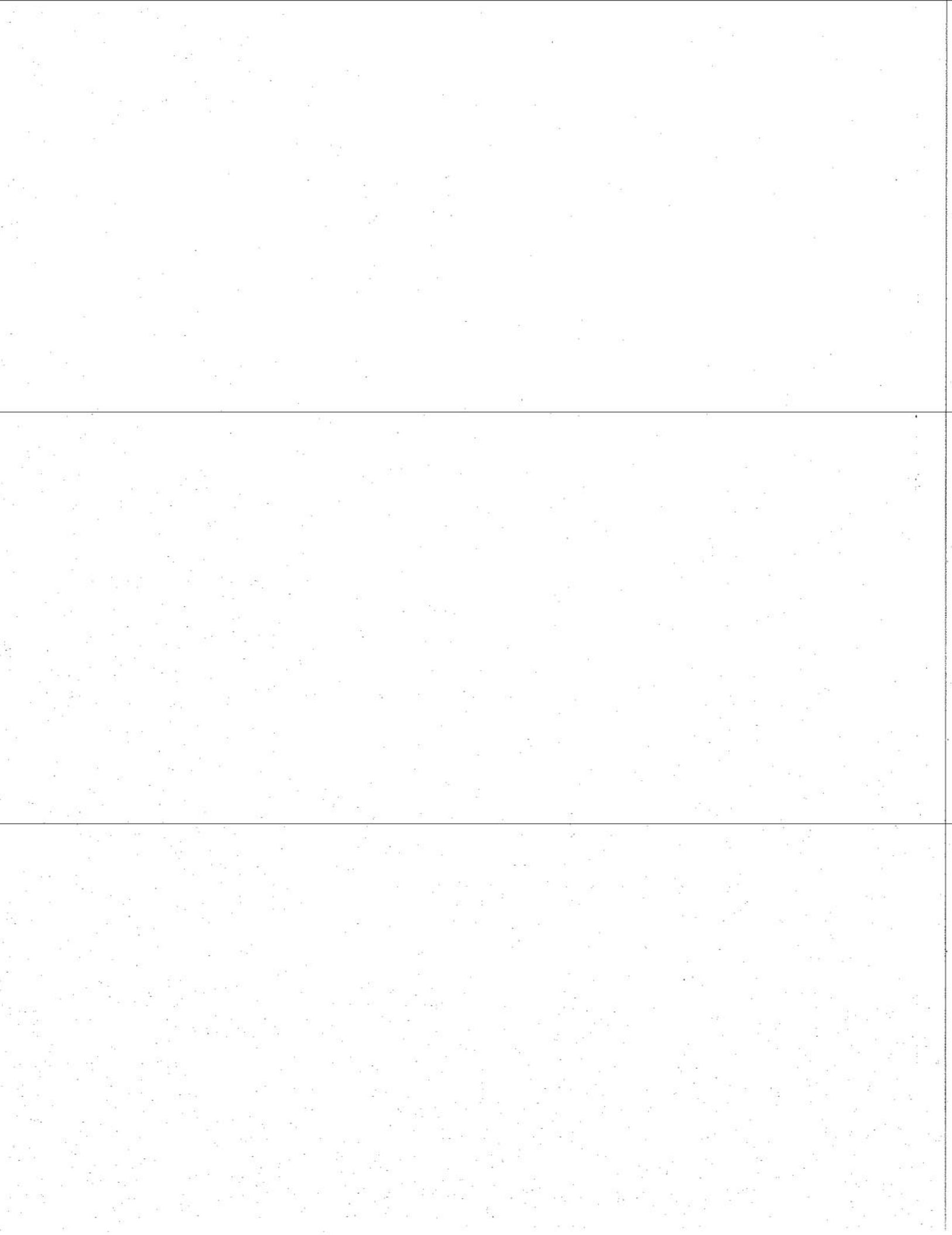
Executive Summary

historic resources that demonstrate the features of a municipal airport. Five airports retain some historic features and are recommended as potential candidates for Phase II field survey.

Phase I activities were completed by a team of Mead & Hunt architectural historians and historians, including Chad D. Moffett, Christina Slattery, Amy R. Squitieri, Mary R. Ebeling, and Matthew T. Becker. Randal Mack, certified pilot with Mead & Hunt, assisted the project team in field survey efforts.

Chapter 1

Aviation Development in Nebraska, c. 1907-1960 Historic Context



Chapter 1

Aviation Development in Nebraska

c. 1907-1960 Historic Context

Early Years of Nebraska Aviation, c. 1907-1914

Aviation was born on December 17, 1903, when Orville Wright made his first successful flight. Although many others soon joined the Wright brothers in experiments with aircraft, it would be another two decades before air transport of passengers and goods emerged as an industry. World War I provided an opportunity for airplanes and pilots to gradually increase in importance and numbers.

Though claims of the first Nebraska flight are contradictory, early aviators took flight in the state between 1907 and 1910. Pioneer Nebraska airplane builders known as the Savidge brothers are believed to have been the state's first plane builders and reportedly completed a successful flight – perhaps in a glider – in about 1907. Reportedly, the brothers later built three successful airplanes. Internationally known pilot and experimental airplane builder, Glenn H. Curtiss, flew a biplane of his own design in Omaha on July 23, 1910, using a pasture located near 45th Street and Military Avenue for takeoff and landing.¹

Lighter-than-air craft were introduced in Nebraska around 1907, when a balloon house was established at Fort Omaha. On and off for the next 13 years, the U.S. Army operated one of the largest balloon flight training schools there.²

Early public exposure to aviation came through air shows that were held across the country, including in Nebraska. In the early 1910s an airplane appeared at the Nebraska State Fair in Lincoln and exhibition flights and

passenger rides were featured. The Aero Club of America sponsored an air show in Omaha as early as 1910. The Savidge brothers also demonstrated their planes at state and county fairs. Such shows were notoriously dangerous, and in 1910, 37 pilots were killed nationwide. Airplane flight demonstrations were also lucrative though, with the Wright Aeronautical Company's flying team making \$1 million in 1911. The Nebraska Aviation Corps – the nation's first National Guard Aviation Corps – demonstrated practice bomb-dropping maneuvers from its headquarters at the State Fair Grounds in 1915.

Other activities that promoted aviation included design competitions. The YMCA of Omaha between 1910-1912 sponsored a contest in "Modern Airplane Construction." Airplane design proved a popular hobby. Many of the earliest investors of aircrafts and airplane engines also were in the automobile business.⁴

Early aviation was unregulated with pilots and airplanes under no state or federal control. Although the Aero Club of America recommended the federal registration of aircraft and the licensing of pilots in 1912, this idea did not take hold. The club itself issued the first pilot licenses.⁵

The first World War prompted increased interest and investment in aircraft development and production. Between 1909 and 1916, the U.S. military purchased only 59 airplanes. Prior to the war, fewer than 200 airplanes had been built by U.S. manufacturers.⁶

Aviation Development in Nebraska, c. 1907-1960 Historic Context

The Influence of World War I, 1915-1920

World War I focused new attention on aviation, but there remained few pilots and airplanes in Nebraska or the rest of the country. Flying remained in its infancy during this period. Beginning in 1918, the U.S. Airmail Service had an important influence on aviation through its demonstration of the feasibility of regular flights and its encouragement of airway and landing field development.

Increased Airplane Manufacturing
World War I led to stepped-up airplane production. After the U.S. entered the war, Secretary of War Newton Baker created the Aircraft Production Board to oversee government contracts and to set standards for military aircraft for the war. The board selected an engine designed by Packard as the U.S. Standard Aircraft Engine, commonly known as the Liberty Engine. The Liberty engine was installed in 4,900 deHavilland DH-4 planes built by the Dayton-Wright Company for use in the war. The Curtiss Company was also awarded contracts to provide the government with airplane engines. The Curtiss Company produced 6,000 planes called the JN-4, referred to as the "Jenny," for the war. To meet demand, the government financed private companies' increased construction of airplane and engine manufacturing facilities.⁷

Redirecting Interest in Aviation

At the end of the war in 1918, government airplane contracts were canceled and pilots returned to civilian life. Airplane manufacturing companies quickly reduced their labor forces and abandoned increased production after forecasting that little profit could be made from civil aviation due to minimal demand. For those companies such as Curtiss and Dayton-Wright that did continue production, pilots, called "birdmen,"

were hired to exhibit their planes, now produced in smaller numbers for military and civilian purposes. Though military pilots numbered less than 1,000 at the end of World War I, another 10,000 men were participating in pilot training programs. These pilots fueled interest in civil aviation and increased demand for small and inexpensive airplanes.⁸

Former servicemen created several flying schools in the state. In 1919 Ray Page acquired surplus war aviation equipment and started to manufacture airplanes in Lincoln. He also began a mechanic's school and, later, a flying school – collectively known as the Lincoln Airplane School. Page's school employed numerous pilots and attracted so many students that it became a center of aviation.⁹

Although bills that would create a federal department to regulate aviation were introduced in Congress during this period, a lack of urgency seemed to have stalled such efforts. Only two states – Connecticut and Massachusetts – had passed any aviation legislation, both to impose safety regulations. The number of pilots, aircraft, and airfields remained too small for the need for regulation to be apparent. In 1918-1919 only 11 Nebraska communities had landing fields. At this time, civil aviation was primarily visible in private pilots, called "barnstormers," who demonstrated airplanes and in the development of national aerial mail delivery.¹⁰

Establishing the U.S. Airmail Service

A small number of Army pilots, flying World War I surplus biplanes, pioneered airmail service and introduced the first transcontinental airways. Although experiments were tried during the 1910s, it would be the early 1920s before airmail transport found its first real successes. In 1912 the Post Office Department began lobbying for funding for regular service and,

Aviation Development in Nebraska, c. 1907-1960 Historic Context

4 years later, an experimental route was approved by Congress. Funds were not allocated until 1918 when Congress appropriated \$100,000 for an experimental airmail delivery.¹¹

The U.S. Air Service was created as an affiliate of the U.S. Army in May 1918. That month, the first scheduled U.S. airmail flight was jointly sponsored by the U.S. Air Service and the Post Office Department. The flight started in New York, and stopped in Philadelphia before ending in Washington, D.C. Pilots completed over 1,200 flights during the first year of airmail operation. Early operations were dangerous, with many fatalities recorded, and occurred only during the daytime.¹²

The airmail service was separated from the Army and transferred to the Post Office Department in July of 1918. The Post Office recruited civilian pilots who began flying the mail between New York and Washington, D.C., in August. In 1919 a route from Chicago to Cleveland was established. Shortly thereafter, Nebraska became a segment of the first transcontinental airmail route. The Post Office continued to operate an expanding airmail system over the next several years.¹³

At a time when there was little market for new civilian aircraft, the fledgling airmail service established a system of transcontinental flights – albeit operating only during daylight – and gathered valuable lessons about airplane maintenance and specifications. Though the airmail system was not profitable, it did demonstrate the feasibility of commercial aviation.

Early Legislation of the Growing Industry, 1921-1930

Throughout the 1920s, inventors and “barnstorming” demonstration pilots dominated Nebraska aviation. Nationwide, war-trained aviators became active spokesmen for the future of aviation. The first legislation was enacted at state and federal levels to promote airport construction and encourage safety in the industry. The 1920s also saw the strengthening of airmail service, including provisions for night flights by 1923 and the use of private contractors in 1925. Nebraska’s place on airmail routes increased public awareness and likely contributed to support for state aviation legislation. The number of pilots, airplanes, and airports in the state remained small at the end of the decade, though proliferating aviation schools were introducing many new people to flying. By 1929, the state had 20 aviation schools.¹⁴

Enactment of State Legislation

Nebraska’s first legislation relating to aviation, the Airport Enabling Act, was passed in 1921 and authorized mid-size to larger cities to acquire land for development of airports. The law recognized the public need for adequate airports and was one of the nation’s first laws promoting aviation. However, its reach was limited.¹⁵

The 1921 Airport Enabling Act was expanded in 1929 to include all cities in Nebraska and to authorize cities to levy taxes to support airport development. The 1929 act, called the Aviation Fields Act, also authorized municipalities to make rules for control of air space that were consistent with federal law. This provision enabled cities to exercise zoning power to provide for safe airport approaches and to set minimum flying altitudes over populated areas.

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In 1929 the state enacted the Aircraft and Airmen Act to provide for licensing of aircraft, pilots, and mechanics, and gave the Railway Commission authority to administer the act. By providing for control over intrastate aviation, this law filled the gap left by the 1926 federal Air Commerce Act, which regulated only interstate air traffic. The Railway Commission resolved that aircraft, pilots, and mechanics would seek federal licenses that would then be registered with the state.¹⁶

Federal Legislation Introduced

After nearly 15 years of pressure from flying enthusiasts and early commercial aviators, Congress enacted the Air Commerce Act in 1926. The act instructed the Secretary of Commerce to foster air commerce, designate and establish federal airways, establish and maintain navigational aids, license pilots, inspect aircraft, and investigate crashes. The act also separated civil aviation from military and naval aviation, giving the Department of Commerce's newly formed Aeronautics Branch responsibility for civilian airways, aircraft, airports, and pilots. The Air Commerce Act formed the foundation for federal aviation policy for the next three decades. Despite subsequent organizational changes, new funding policies and the added provision of a traffic control system, the federal government's role in aviation regulation and development remained largely unchanged until the Federal Aviation Agency was founded in 1958.¹⁷

The Aeronautics Branch was charged with fostering the growth of air commerce and encouraging construction and improvement of airports. Since federal funds were limited, much of the actual development was left up to the states. Still, enactment of the Air Commerce Act was a first step in promotion of airport construction by the federal government. The first head of the

Aeronautics Branch, William P. MacCracken, Jr., made clear the responsibilities of cities across the nation: "It is the duty of every municipality to own an airport, just as much as it is its duty to own and maintain the streets, parks, and harbor facilities within its limits."¹⁸ In 1928, 800 airports – many fields with no other facilities – were in operation nationwide, and another 800 were proposed.¹⁹

The 1926 act also spurred the development of commercial aviation. Within a year of passage, airmail pilot Charles Lindbergh made the first nonstop flight across the Atlantic Ocean, the Aeronautics Branch issued its first airway map for a portion of the United States, and Pan American Airways began its first scheduled international commercial flight from Key West to Havana. Lindbergh had taken his first flying lessons at a school in Lincoln.²⁰

U.S. Air Service

During the early 1920s the U.S. Air Service established the first transcontinental flights and initiated night flights. In September 1920, a regular transcontinental route between San Francisco and New York was in operation. For these early cross-country deliveries, mail was flown by plane during the day and then transferred to trains during the night. The transcontinental route stimulated airfields to be constructed across the country. During 1920, too, radio telegraph stations were installed at Washington, D.C.; Omaha, Nebraska; Elko, Nevada; and Oakland, California – building the framework for the future national weather reporting service.²¹

In 1921 the first transcontinental flight without night stops occurred from San Francisco to New York. Two planes from New York to San Francisco, and two planes from San Francisco to New York were scheduled. Poor weather prevented the westbound flights from being completed, and

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only one eastbound plane reached New York. The other eastbound flight ended tragically when pilot W.F. Lewis was killed in a crash shortly after takeoff from Elko, Nevada. In a famous flight through a snowstorm, James H. "Jack" Knight completed a key leg for the successful eastbound flight. Knight flew the 830-mile leg from North Platte, Nebraska, to Chicago, stopping in Omaha and Iowa City. In all, it took seven pilots 33 hours and 20 minutes to fly the 2,660 miles from San Francisco to New York. Night flights did not become common until 1923 when the Post Office opened the first lighted airway between Cheyenne and Chicago, which crossed Nebraska at Omaha, Lincoln, Grand Island, North Platte, Kimball, and many communities in between.²²

The Post Office laid an important foundation for the future of airmail by providing a lighted airway coast-to-coast with markers, emergency landing strips, and beacons for use by pilots in night flying. A total of 289 beacons, an average of 30 miles apart, lighted the course, and 17 weather reporting stations linked by radio were positioned along the route. By 1921, there were 98 airmail planes in service; of these, approximately half were surplus DH-4s obtained from the Army at minimal cost and outfitted by the Post Office.²³

In 1925 Congress decided that the Post Office had completed its pioneering efforts and the time had come to turn airmail delivery over to private contractors. The Airmail Act, called the "Kelly Bill" after its sponsor, Representative Clyde Kelly of Pennsylvania, passed in February 1925 and forced the Post Office to let contracts to private contractors to fly mail. The railway industry, which considered Representative Kelly an ally, exerted influence in affecting this switch to private contractors. The railways found air transport of mail threatening to their own

mail carrying business. The Post Office had never made a profit delivering airmail, and the railway companies assumed that, without the federal government's support, private contractors would fail. The railway industry relied upon the Kelly Bill to return the mail delivery business to their exclusive realm. Shortly after the bill passed, in September 1925, the federal government let eight airmail routes. By 1926, 12 routes had been let to private contractors. Ford Motor Company Airlines received two of the early contracts and automobile giant Henry Ford received the honor of flying the first route.²⁴

Civil Aviation in Nebraska

Through the 1920s, private pilots, called "barnstormers," gave airplane demonstrations that both piqued and satisfied the public's curiosity about aviation. Surplus World War I planes, most notably the *Jenny*, were sold to pilots who traveled the country and gave rides for a fee. In Lincoln, flying school operator Ray Page and his pilots staged an aerial pageant during this decade.²⁵

Lincoln also became a center of airplane manufacturing activity. Three well-known airplanes – the Lincoln-Page, Lincoln-Standard, and Lincoln P-T – were manufactured in Lincoln by Page's Lincoln Airplane School during the 1920s. Also in Lincoln, Johnny Moore built the first Arrow aircraft in 1924. By 1929, the Arrow Airplane Company was producing four airplanes a day using a straight line production system. Reportedly, two additional aircraft manufacturing plants were located in Omaha by the end of the decade, bringing the state's total to four.²⁶

The impact of aviation in the state can most easily be seen in the number of participants, devoted facilities, and aircraft. Numbers historically reported include 235 pilots in 1927, and 12 airports and 50 airplanes in 1928.

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At Omaha and North Platte, Nebraska's first Flight Service Stations, which served aircraft and pilots, were established in 1927. The state's recently enacted aviation legislation was beginning to exert influence. During 1929, 33 aircraft licenses, 16 pilot licenses, and 14 mechanics licenses were filed with the Railway Commission.²⁷

The First Commercial Airlines

Commercial aviation began in Nebraska in the 1920s, but had a turbulent development. Many operators failed due to lack of capital, mail contracts, or passengers. Successful carriers were typically purchased by the growing national airlines. Boeing Air Transport (BAT) was the pioneer airline in Nebraska, beginning operations on July 1, 1927.²⁸

New Assistance Spurs Aviation's Growth, 1931-1940

As air transportation increased in the 1930s, the need for improved airports and navigation devices became apparent. During the early years of the Depression, however, little changed at the nation's airfields as minimal money was available for equipment and facilities. A huge shift took place mid-decade as resources were targeted toward public facilities such as airports. In Nebraska, contributions to the development of aviation came from two angles: the support provided by the newly established Nebraska Aeronautics Commission, and the funding and labor provided by federal relief programs.

The Status of Nebraska Aviation

Despite the Depression, some small aviation projects were undertaken in Nebraska in the early-to-mid-1930s. Projects included an experiment in agricultural aviation and the continuation of small-scale commercial airline operations. New range stations and Flight Service Stations were added to assist pilots with navigation. The low-frequency range

station was accepted as the national standard during this decade, and North Platte established such a station in 1930. Across the country, Flight Service Stations provided weather information, coordinated aircraft, and aided pilots during flights. Sidney and Scottsbluff added Flight Service Stations in 1934.²⁹

Though crop dusting had become relatively common nationwide by the 1930s, agricultural aviation had not yet taken hold in Nebraska. One early 1930s incidence of crop dusting is referenced in an historical account of the state's aviation development. During the invasion of grasshoppers in Nebraska in 1933, two men flying a Curtiss Robin aircraft reportedly dusted the first acres in the state.³⁰

Nebraska was served by several airlines by the mid-1930s. In 1931 United Airlines was formed by combining BAT and three other regional airlines. United Airlines provided the first coast-to-coast service. United Airlines offered commercial flights aboard a Boeing 247 until 1936. Rapid Air Transport, a predecessor of Braniff Airways, operated a Ryan mono-plane that served Omaha on a route between Sioux Falls, South Dakota, and Kansas City, Missouri. This airline also held two airmail contracts. Mid-Continent Airlines, which also became part of Braniff Airways, served Omaha on its route from Minneapolis to Tulsa, Oklahoma.³¹

Establishment of the Nebraska Aeronautics Commission

In 1935 the state legislature passed a bill establishing the Nebraska Aeronautics Commission. A small group of individuals had advocated for the legislation, believing that greater control and support of aviation would help the industry gain increased public confidence. As the state's first governmental body entirely concerned with aviation, the five-member Nebraska Aeronautics

Aviation Development in Nebraska, c. 1907-1960 Historic Context

Commission served the role of promoting, instead of merely regulating, the industry. The Nebraska Aeronautics Commission was authorized to collect and disperse funds collected from a tax on gasoline used in aircraft; to manage aircraft and equipment in Nebraska; and to define, administer, and enforce state regulations and laws relating to aeronautics.³²

The Nebraska Aeronautics Commission allocated taxes that were gradually collected to help develop city and county airports. Planned, new airports and existing airports needing improvements received priority from the commission based on their ability to serve an air route, a primary trading center, or an accredited school with a Civilian Pilot Training Program in Nebraska. Between 1935 and 1947, the Nebraska Aeronautics Commission contributed \$387,072 toward the development of airports.³³

The Nebraska Aeronautics Commission also promoted air transportation in the state. In collaboration with the State Planning Board, the commission produced the publication, *Maps of Nebraska Airports*, to promote safe aviation in Nebraska. This publication was produced with funding from the Works Progress Administration (WPA).³⁴

Charles S. Doyle, a pilot for the U.S. Weather Bureau in Omaha, served as the Nebraska Aeronautic Commission's first secretary. His early tasks involved inspecting crash sites and drafting air regulations. He also drafted safety recommendations for approval by the commission.³⁵

The Nebraska Aeronautics Commission accepted filings of federal licenses until 1938, when it required pilots, airplanes, commercial airports, and airfields to also obtain state licenses. The commission issued a caution against pilots using airports that were not

state licensed except for emergencies. Barnstorming and non-resident pilots or planes were only permitted to operate on licensed fields after obtaining a special permit.³⁶

Federal Aviation Regulation

The Civil Aeronautics Act of 1938 created an independent federal aviation agency, the Civil Aeronautics Authority. The new entity was provided with economic regulatory powers similar to those of the Interstate Commerce Commission over surface transportation. This extended federal regulation to new types of air commerce, including all interstate commerce and mail transport. As a result, aircraft and pilots had to meet federal standards of safety and proficiency. To improve the proficiency of pilots, in 1939 the Civil Aeronautics Authority established a nationwide training program whereby college students were trained as pilots at government expense. The Civil Aeronautics Authority assumed the federal oversight role that had been previously filled by the Bureau of Air Commerce – previously known as the Aeronautics Branch of the Department of Commerce.³⁷

The Civil Aeronautics Authority – and after 1940 the Civil Aeronautics Administration – was responsible for directing federal expenditures toward facilities that served the needs of air commerce or of national defense. The WPA, as the largest of the federal relief agencies, provided a major source of funding for airport development. WPA-funded airports had to be operated in the public interest. Granting any exclusive rights to a private individual or corporation was forbidden. Local government sponsors had to demonstrate that their projects met these requirements before they became eligible for WPA funds. In Nebraska, the Aeronautics Commission recommended projects that would receive funds from the WPA. After

Aviation Development in Nebraska, c. 1907-1960 Historic Context

1937, the commission took an active role in assisting municipalities with planning for airport projects. Ralph H. Richardson was hired as the first state airport engineer and charged with making surveys of proposed airport projects. He and his successor, L.B. Tyson, gave technical assistance to local authorities undertaking projects.³⁸

The federal aviation agency worked closely with local sponsors and the WPA to implement WPA airport projects. Once the Civil Aeronautics Authority approved the project need and construction plans, the agency's regional officers furnished technical advice on the aeronautical aspects of project implementation to the local sponsor. Sponsors were required to provide the necessary land, assist in project planning, and maintain the facilities once they had been completed. WPA responsibility for an individual project included engineering review prior to initiation of work, assignment of workers and actual management of the construction process.³⁹

The Works Progress Administration's Role in Airport Development

The WPA, officially established in July 1935, was the most important of the federal relief agencies. In addition to its own programs, the WPA also supervised the Public Works Administration, Civilian Conservation Corps, and National Youth Administration programs and assumed some of the responsibilities of the Federal Emergency Relief Administration. The WPA accounted for approximately three-fourths of the employment provided by federal relief agencies, employing eight million men and women as it spent \$10 billion between 1935 and 1943.

Nationally, the WPA and Federal Emergency Relief Administration contributed labor and materials toward airport construction,

primarily focusing on facilities that served civilian needs. Due to the labor-intensive methods required for their construction, airports employed a significant number of WPA workers. Projects involved grading, drainage, paving, and other ground improvements and used little machinery. The hundreds of airports built or improved by the WPA during its 8 years of operation varied widely in size and type of service provided.⁴⁰

Nationwide, in the first 5 years of the WPA program, \$150.8 million in funds were appropriated for airport projects, which contributed to a total cost of \$200.5 million. According to the Federal Works Agency's 1940 *Report on the Progress of the WPA Program*, a total of 247 new landing fields had been built by WPA workers between July 1935 and June 1940. In addition, 317 existing landing fields were reconstructed or improved. Airport buildings constructed totaled 543, including 178 hangars. An additional 1,091 buildings were reconstructed or improved. The WPA enabled airports to upgrade to longer runways with harder surfaces that could accommodate landings of larger and faster planes. The advantages of receiving airmail, passenger, and express services were brought to many municipalities that formerly had inadequate facilities.⁴¹

Nebraska's Aviation Projects

A tally of Nebraska's aviation facilities by the Aeronautics Commission in 1938 showed 31 airports, including 20 municipal and three that were exclusively commercial, and five radio range stations at Omaha, Grand Island, North Platte, Hayes Center, and Sidney. Federal agencies, including the WPA, Civil Works Agency, Federal Emergency Relief Administration, and National Youth Administration, contributed to airport and airway development in Nebraska during the late 1930s, with the WPA playing the largest

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role. In 1935 the airport at Grand Island had received \$302,255 in WPA funds.⁴²

Through June 1940, Federal Works Agency records show that WPA projects in Nebraska included two new landing fields, three improved fields, eight new airport buildings, five improved buildings, and 218 new air markers. This work was accomplished with \$1,762,408 in WPA funds and \$180,936 in sponsor funds. The federal agency's accounting differs only slightly from that of the Nebraska Aeronautics Commission, which recorded \$1,938,373 in statewide expenditures on airport development, expansion, and improvement in 1940. This total included \$1,678,846 from the WPA, \$10,704 from the National Youth Administration, \$14,175 in state funds, and \$234,646 in municipal funds.⁴³

In addition to federal programs, by the late 1930s, the Nebraska Aeronautics Commission was making significant contributions to the development of aviation in the state. In 1939 the legislature appropriated \$20,000 to assist municipalities with airport projects with no more than \$900 going to any one landing field. State funds primarily went toward seeding, grading, and fencing landing fields. During 1940, the commission's records show \$38,039 in aviation expenditures, of which \$10,088 went toward aid to municipalities. Other expenditures were air marking and airport surveying, as well as salaries and office expenses. In this year, 167 Nebraska towns and cities were air marked with identifying letters to aid in air travel. This brought the total number to 328.⁴⁴

By 1940, aviation had greatly expanded in Nebraska. The number of licensed aircraft went from 97 in 1939 to 221 in 1940. The state had 812 pilots on record in 1940, compared with 196 a year earlier. Also in 1940, 24 aviation schools were licensed in the

state. The total number of airports in Nebraska was raised to 48 in 1940.⁴⁵

Commercial need clearly contributed to the growth of aviation facilities. In 1940 the Aeronautics Commission reported that Nebraska had witnessed an unprecedented increase in airmail, express mail, and passengers carried by the airlines, which was well above the national average. In this year, the state was served by three airlines. United Airlines served Omaha, Lincoln, Grand Island, and North Platte. Mid-Continent Airlines continued to serve Omaha. Inland Airways flew to Scottsbluff on its route from Cheyenne, Wyoming, to Huron, South Dakota.⁴⁶

The number of pilots was also growing. Many schools in Nebraska were under contract to the federal Civil Aeronautics Authority, which also approved the flight instructors, to conduct courses in aviation as part of the Civilian Pilot Training Program. Colleges and universities across Nebraska conducting such courses included the University of Nebraska, Wesleyan University, Doane College, Hastings College, Omaha University, Peru State Teachers College, Wayne College, Chadron State College, and Creighton University. On a smaller scale, training was also open to non-college applicants.⁴⁷

World War II and Aviation Expansion, 1941-1950

On the eve of America's entrance into World War II, the public's interest in aviation was increasing. The number of licensed aircraft and airfields corresponded to this interest. In 1939 there were 97 airplanes in the state and 29 civil airports; by 1941, there were 283 aircraft and 50 civil airports. In October 1940, Congress appropriated \$40 million for construction and improvement of up to 250 airports nationwide. To qualify for federal

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funds, improvements had to be deemed necessary for the national defense. Once sites were selected, the WPA undertook construction at the selected sites in the 1940s.⁴⁸

Following the attack on Pearl Harbor in December of 1941, concerns of national security mounted. In response, the federal government issued heightened security regulations that included airports. The additional costs forced many small civilian airports in Nebraska to temporarily suspend operations, resulting in a reduction of operating airports to 13 at the end of the war. State aviation quickly rebounded, and by January 1945, the number of civil airports had climbed to 65.⁴⁹

At the end of the decade, the federal government decommissioned many wartime airfields across the country. In 1947 the Nebraska Department of Aeronautics obtained five surplus airfields from the War Department. The state purchased airfields and facilities at Bruning, Fairmont, Harvard, McCook, and Scribner to be used as auxiliary airfields maintained for emergency and national security purposes. The total cost of the five airports was \$37 million which included 125 buildings on 9,000 acres of land and maintenance equipment.⁵⁰

After the war ended, the postwar effects on aviation mimicked those that followed on the heels of the first great war. As pilots returned home, interest in aviation expanded. A provision of the GI Bill allowed returning veterans to learn how to fly at the government's expense and fueled the boom in private aviation.

The Works Progress Administration Shifts to Strategic Projects

During the war, the WPA was called upon to conduct an accelerated program of airport construction and improvement in strategic areas across the country. A final WPA report described projects as including "many airports along the Nation's major air lanes and strategic military airfields, as well as small airports in less populous areas off the regular lines of flight which previously had no facilities for landing or servicing of planes."⁵¹ By 1943, the WPA had worked on 267 airports nationwide.⁵²

During its existence, the WPA spent a total of \$4,625,952 in Nebraska. The Nebraska Aeronautics Commission estimated that \$3,881,427 of this total was spent on eight airport projects and the remainder used for the construction or improvement of 22 airport buildings. For the eight projects completed, the WPA's share represented two-thirds of the total project cost with local communities contributing much of the remaining cost and the state providing a small portion. With only two exceptions – Beatrice and Broken Bow – the WPA-funded projects were located along federal airways or in major population centers. During the 1940s, the WPA was also involved with many airport improvements, including developing Master Plans for Beatrice, Fremont, and Norfolk, and survey and grading projects that began in the late 1930s at many airports across the state.⁵³

With the end of World War II, the federal government issued liquidation orders on airport projects. Nationally, WPA had completed 103 airports, partially completed 93, and 71 were taken over by the Army or Navy.⁵⁴

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The Civil Aeronautics Administration

In 1940 the Civil Aeronautics Administration was formed when the President transferred the Civil Aeronautics Authority into the Department of Commerce. The Civil Aeronautics Administration was given three duties: (1) encouragement and development of a nationwide air transportation system and civil aeronautics; (2) regulation of air transportation and air commerce; and (3) promotion of adequate, economical, and efficient service by air carriers. The Civil Aeronautics Administration divided the country into a hierarchy of regions and districts with centralized offices.⁵⁵

In the early 1940s, the Civil Aeronautics Administration set up training centers in Nebraska for the Civilian Pilot and War Training Programs. These centers included the construction of temporary airports and landing fields with assistance from the Nebraska Aeronautics Commission. To establish the programs, the War Production Board established the Defense Plant Corporation to purchase privately owned aircraft for the use of the federal training programs. Planes were purchased throughout the nation and moved to training centers, increasing the number of aircraft available in the state for war training. The government made efforts to increase the number of trained pilots available for the war and encouraged recent graduates of the Civilian Pilot Training Program to apply for further aviation training for military service.⁵⁶

In December 1942, the Civilian Pilot Training Program was reorganized to train pilots for military combat flights. Since the new curriculum was more rigorous, the number of licensed schools in Nebraska dropped from 13 to five, with Omaha, Lincoln, Hastings, North Platte, and Chadron continuing to host programs. The Nebraska Aeronautics Commission was responsible for inspection of

the flying schools and airports to ensure safe procedures and equipment.⁵⁷

During the early 1940s, the entire pilot training facilities of the Civil Aeronautics Administration were devoted to the war program, while airport facilities experienced more modest growth. By the beginning of 1942, more than 100,000 pilots were certified in the United States – representing a fivefold increase over 3 years. The total number of airports in the country reached 2,517 in the early 1940s. During the war, the Civil Aeronautics Administration continued its work in civil air traffic control. On February 15, 1942, the Civil Aeronautics Administration issued a regulation that required all airports to maintain 24-hour security to log all incoming and outgoing civilian flights as a domestic wartime security precaution. This regulation forced several small airports to close because of the prohibitive cost. The airports that continued operation were classified by the Army and Navy as “designated landing areas,” which were maintained as emergency landing areas for military and civilian aircraft.⁵⁸

Civil Air Patrol

Prior to the United States entry into World War II, the federal government secured a strong civil defense, including the development of air forces. In May 1941, the Office of Civilian Defense was formed. The Office, headed by New York Mayor Fiorello H. LaGuardia, took quick action toward activating a civilian air patrol. LaGuardia selected aviation leaders in each state to serve as “Wing Commanders,” and sought formal endorsement from the military. The Civil Air Patrol was activated on December 1, 1941, as a division of the Office of Civilian Defense. The Civil Air Patrol’s stated objective was “to enlist, train, and discipline civil aviation personnel and material so that their potential value to defense may be made immediately

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available." And by early 1942, the Civil Air Patrol was seeking to enlist 280,000 recruits – including 90,000 licensed pilots, 90,000 student pilots who were soon to be licensed, and approximately 100,000 ground personnel – for the duration of the war. The Civil Air Patrol was open to licensed civilian pilots of both sexes. The only requirements were that Civil Air Patrol pilots had to have been U.S. citizens for 10 years and be willing to undergo a background check by the Federal Bureau of Investigation.⁵⁹

Each state formed a "wing," led by a Wing Commander who generally held the grade of a colonel. Wing Commanders appointed Group Commanders and Squadron Commanders within their respective wings. The Squadron was the community level of the Civilian Air Patrol and was trained to provide assistance to the community, the state, and the nation in times of national disaster, aircraft accidents, national emergencies, and war. In Nebraska, the Secretary of the Aeronautics Commission was appointed Wing Commander.⁶⁰

The Civilian Air Patrol was transferred to the War Department in the spring of 1943 and was made an auxiliary of the Army Air Forces. At that time, the Civilian Air Patrol had more than 80,000 members, plus 20,000 cadets of high school age. The Civilian Air Patrol grew to include about 2,000 airports in the United States. During the war, the Civilian Air Patrol monitored the coast and the U.S.-Mexico border to detect illegal aircraft and potential espionage activity. Courier and cargo hauling emerged as one of the Civilian Air Patrol's most important wartime activities. The Nebraska Aeronautics Commission and the Civilian Air Patrol sponsored courier flights to relieve the Army on supply missions and mail services.⁶¹

The advent of the war brought the imposition of flying restrictions and rations for most civilian pilots. Within a few months, it became difficult for civilians to fly their own planes, because gasoline was restricted and repair parts and services were difficult to obtain. However, airplanes dedicated for Civilian Air Patrol purposes had priorities enabling them to fly with few restrictions. The War Production Board also limited the sale of new planes with less than 500 horsepower and restricted the amount of aluminum that could be used in airplane frames. No limit was placed on the sale of aircraft to the Civilian Air Patrol, Civilian Pilot Training Program, or state guard units.⁶²

Nebraska Aviation Development

During much of the early 1940s, federal funding and assistance was directed on war efforts with limited state-level airport projects. In 1941 the Nebraska Aeronautics Commission hired a draftsman and field engineers to develop plans for airports in the state – surveys were made at 10 airports across the state (Ainsworth, Chadron, Fairbury, Falls City, Hartington, Hebron, Holdrege, Imperial, McCook, and York); master plans were prepared for 13 communities (Ainsworth, Chadron, Fairbury, Falls City, Fremont, Hartington, Hebron, Holdrege, Imperial, McCook, Norfolk, Scottsbluff, and York); and improvements were made at 14 airports (Ainsworth, Beatrice, Blair, Chadron, Crete, Fairbury, Fremont, Hastings, Norfolk, North Platte, Omaha, Peru, Scottsbluff, and Tecumseh).⁶³

Anticipation of the development of civil aviation facilities after the war started as early as 1943, when the Nebraska Aeronautics Commission announced postwar airport planning and improvement activities. The Nebraska Aeronautics Commission asked municipalities to work with their chamber of commerce, or other civic group to establish

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their future development needs for commercial service, airmail, private flying, and cargo. However, in order to be eligible for state aid, the Nebraska Department of Aeronautics required municipalities to own the airport site. Additional legislation in 1943 required site selection approval of both public and private airport sites by the Nebraska Aeronautics Commission prior to development. The approval was based on six determining factors: location; proximity to existing airports; the presence of dangerous obstructions; ability to expand; appropriate topography; and meteorological conditions. The state, through direct state-aid, contributed to municipal airport projects in communities that did not receive federal assistance, helping to establish or improve 21 additional airports by 1943. In exchange for providing assistance, the Nebraska Aeronautics Commission required that the airport meet minimum state specifications.⁶⁴

The major regulatory contribution of the Nebraska Aeronautics Commission was to investigate and enforce rules of the Civil Aeronautics Administration, resulting in most state regulations mirroring federal rules. For licensing in Nebraska, pilots, mechanics, instructors, and airport operators had to hold a federal license and register the federal license with the Nebraska Aeronautics Commission to be licensed in Nebraska. As the decade continued, state legislation established an active role in regulation and promotion of aviation.⁶⁵

State Legislation

Three aviation bills were introduced into the Nebraska State Legislature and passed in 1945: (1) the Revised Airports Act; (2) Airport Zoning Act; and (3) State Aeronautics Department Act. This legislation attempted to address state and local ownership and jurisdictional problems, and difficulties due to the increased volume, size, and speed of

aircraft during the postwar years. This legislation was based on model acts developed by federal aviation agencies to encourage greater uniformity of regulation among the various states.⁶⁶

The *State Aeronautics Department Act* established the state of Nebraska Department of Aeronautics, replacing the Nebraska Aeronautics Commission. The Department of Aeronautics was charged with promoting a statewide system of airports and aviation safety; revising aviation laws as necessary; and cooperating with the federal government in its implementation of uniform laws. A director appointed by the Governor replaced the duties and expanded on the authority of the old five-member Commission. Additionally, the director reported to the Governor, weakening the power of the Commission. The Commission retained an advisory role and was responsible for distributing state and federal funds for airport construction, designating new airport sites, and providing state-owned aircraft and pilots.⁶⁷

Important changes in the State Aeronautics Department Act from the earlier provisions were the Nebraska Department of Aeronautics' role, which included:

- ▶ Mandatory supervision on all projects using state or federal funds.
- ▶ The ability to designate, design, and promote a state airway, including charting and publishing information communicating the status of the state airway system.
- ▶ Providing municipalities free engineering and other technical services.
- ▶ The ability to contract with the Department of Roads and Irrigation for airport maintenance and improvements.

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- ▶ The cooperation and coordination of federal aviation regulation and policy.
- ▶ The ability to acquire state-owned and operated airports.

Subsequently, the act has had several amendments, including one that gave the agency economic regulatory powers in 1947. The changes highlighted the agency's mandate of actively promoting state aviation.⁶⁸

The other two acts of 1945 include the *Revised Airports Act*, which created a simplified process to establish airports with the use of municipal funding. The act also allowed multiple municipal governments to join funds and split powers to establish an airport to jointly serve their population. Importantly, the revised airport act required the approval of the Nebraska Department of Aeronautics for all airport projects positioning the Nebraska Department of Aeronautics as the agency to request, manage, and distribute all federal funding for projects.⁶⁹

The *Airport Zoning Act* resulted from fears of obstructed approaches at airports due to continued urban development. Airports with inadequate zoning, it was thought, would result in the obsolescence of facilities, as larger aircraft would be unable to land, or prohibit airport expansion in the future. The Airport Zoning Act provided extensive zoning controls for all public airports regardless of size or location.⁷⁰

State Activities and Promotion

The Nebraska Department of Aeronautics took a more active role in aviation promotion than its predecessor. In 1945, 378 aircraft and 758 registered pilots, mechanics, and flight instructors were found in Nebraska. By 1950, the number of aircraft more than quadrupled to 1,350, and the number of registered

individuals escalated to 3,180. The Nebraska Department of Aeronautics during this time actively promoted civil and commercial aviation, and provided direct state funds for labor and materials to state projects. These funds provided assistance for projects that rated low in priority, thereby not obtaining approval for funds. Between 1945 and 1960, the Department spent \$554,049 in direct state aid for lighting, administration buildings, rotating beacons, and construction of runway and landing strips.⁷¹

Navigational Aids

Prior to 1940, the state had air markers in 161 communities. In an effort to increase the number of air-marked communities, the Nebraska Aeronautics Commission employed a full-time commercial painter to travel the state. In 1940 an additional 167 Nebraska towns and cities were air-marked, bringing the state total to 328. Communities were to furnish WPA labor to assist in the painting and layout. Used as a navigational tool, air marking consisted of painting the name of a town or city on the roof of one of the larger buildings with 10-foot letters showing latitude and longitude in 7-foot numbers with an arrow pointing north. Also painted was a 10-foot circle with an arrow pointing to the nearest airport, indicating the distance in miles. Air markers were painted in chrome yellow with a black border on aluminum roofs, and asphalt roofs were first painted with aluminum to provide a protective layer.⁷²

The air-marker program was discontinued January 17, 1942, because of the declaration of war and fear that air marking may assist the enemy if they reached Nebraska. The Nebraska Department of Aeronautics in 1947 resumed its air-marking program, with the goal of air marking every community in the state. At that time, 52 existing air markers were judged to be in good visible condition; 16 more markers were painted in 1947, with

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51 more planned. After 1947, the Nebraska Department of Aeronautics provided the paint, plans, and labor for air markers at a cost of approximately \$10,000 a year. The program started with municipal airports in the western portion of the state and moved eastward.⁷³

To improve cross-country communication between aircraft and landing facilities, Grand Island, Chadron, and Lincoln added Flight Service Stations in the 1940s, bringing Nebraska's total number of communications stations to six. The stations used radio transmitting to communicate weather, service, and flight information between connected airports.⁷⁴

In 1948, the first Visual Omni Range (known as VOR) station was installed in Nebraska at Omaha. A VOR transmits a 360-degree signal that pilots could tune instruments to and easily fly towards. VOR navigation systems helped to increase the capacity of airways by allowing pilots to visually check their course, rather than having to listen to a signal in a headset. After the success of the VOR station at Omaha, stations were added at Grand Island and North Platte later that year. The Engineering Division of the Nebraska Department of Aeronautics provided the engineering, planning, and supervised the construction of the VORs installed across the state.⁷⁵

Fixed-base Operators

Fixed-base operations (or FBOs) include flight training, mechanic training, aircraft maintenance and repair, aircraft sales and service, cross-country charter operations, crop dusting, power line and gas patrol, and aerial photography. The number of fixed-base operators increased with the interest in aviation. In 1946 there were 32 operators, and by 1947 the number rose to 70.⁷⁶

Publications

In 1941 the Nebraska Aeronautics Commission issued two publications for use by communities. The "Nebraska Airport Plan" listed existing and proposed airports in the state, indicating the classification of each and noting modifications needed to better serve air traffic. Another booklet helped municipalities with airport development projects by outlining site selection factors and facility needs depending on population and potential business, including air cargo, passengers, and postal revenue.⁷⁷

In 1948 the Nebraska Department of Aeronautics published a state aeronautical chart – among one of the first states in the nation to publish a map to aid in general aviation. Also available that year was the "Nebraska Airport Directory," and the newsletter entitled "Pireps" (pilot reports shortened). The newsletter covered state and federal laws and news, was sent to 4,000 aviators across the state.⁷⁸

Air Age Education Program

The program started in 1940 with the State Aeronautics Commission offering free textbooks to high schools in the state that offered instruction in aviation. By 1943, 130 high schools in the state were participating in the aviation program. Courses included aerodynamics, meteorology, navigation, engines, aircraft radios, and air traffic regulations. After 1945, the Nebraska Department of Aeronautics worked with the Department of Public Instruction by providing technical assistance and funds to facilitate the programs outlined by the State Superintendent related to aviation. A variety of teaching materials were available for students from elementary age to high school in 1947. As the program matured, focus shifted to training teachers about aviation. In the late 1940s, scholarships were available to teachers for summer aviation study through

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workshops, and the opportunity for airplane field trips. The program continued into the 1960s.⁷⁹

Nebraska Flying Farmers

The Nebraska Flying Farmers were organized in February 1946 to develop family flying in the state. The organization sponsors social activities, such as "fly-ins," and some chapters participate in flights of mercy to give residents of rural areas improved access to health care.⁸⁰

Commercial Aviation

Several commercial airlines served Nebraska in 1947, including United, Mid-Continent, and Western Airlines. Late in 1949, the first local airline, Nebraska Mid-West Airlines, began operations providing service to south and central parts of the state and out-of-state to Huron, South Dakota; and Minneapolis. Other small airlines serving the state in the 1940s included Prairie Airways and Inland Airways.⁸¹

Federal Airport Act of 1946

Federal funds, distributed to Nebraska by the Civil Aeronautics Administration, were used for allowable project costs and had to be matched by state or municipal funds for construction costs. The federal share for acquiring land for an approved project, prior to May 13, 1946, was limited to 25 percent of the allowable cost of acquisition. Nebraska's federal funding increased toward the end of the decade, totaling \$1,485,367 for the years 1947-1949. The Nebraska Department of Aeronautics during this same time used the funds to build 21 new airports and to finance improvements on 22 existing facilities. Since federal activity focused on airports serving the national defense, the development of private aviation lagged behind at the end of the war. In 1946 Congress passed the Federal Airport Act to provide direct grants for airport development. The act was modified in 1947 to allow for channeling of funds through the

states. From the passage of the Federal Airport Act in 1946 until 1958, approximately \$400 million was spent or obligated by the federal government for airport development. In 1947 Congress allocated \$45 million under the National Airport Plan, and \$32.5 million in 1948. Seventy-five percent of the funds were dedicated to the states based on each state's population and size.⁸²

The Federal Airport Act enabled the Nebraska Department of Aeronautics to provide assistance and personnel support for municipal airport development. Engineering and technical services were provided free-of-charge to any airport in the state that requested assistance or funds. Initially, the Nebraska Department of Aeronautics contracted with the Department of Roads and Irrigation to provide engineering and services between 1945 and 1957. Because the Nebraska Department of Aeronautics assumed supervisory control over all state and federally funded airport construction, the Engineering Division often performed the engineering services at a low overall cost, and few consulting engineering firms were used.⁸³

The Nebraska Airlift of 1949

During the winter of 1948-49, between November 1948 - April 1949, many portions of northeastern Nebraska received higher than average snow fall, resulting in snowbound conditions. As losses to livestock and potential human fatalities mounted, in January the U.S. Fifth Army and the Nebraska National Guard began "Operation Snowbound." Bulldozers worked to clear highways, while aircraft delivered food and medical supplies to homesteads in rural areas. The aircraft also airlifted sick patients to hospitals and dropped feed to starving cattle caught in the storm. The Norfolk Airport served as the headquarters for the effort. There were over 200 pilots flying 150 airplanes delivering these services to

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Nebraskans, including the Civilian Air Patrol's flying of Red Cross missions.⁸⁴

In Holt County, mail delivery was suspended in November and rail service ceased in December, leaving air as the only form of transportation. The American Red Cross organized five light-commercial and one National Guard plane that flew out of O'Neill delivering necessary supplies, food, medicine, and heating fuel to 1,038 snowbound homesteads in 564 plane missions.⁸⁵

Moving into the Modern Era, 1951-1960

Between 1950 and 1953, government funding and attention focused on the Korean War effort, leaving numerous small airport facilities with needed improvements. After the war, airport use increased and efforts were focused on improving municipal facilities. The increasing number of pilots and aircraft flying resulted in more accidents, pointing to necessary changes in aviation policy and regulation.

During the 1950s, the Federal Airport Act continued to allocate funds, via the National Airport Plan, to develop airport facilities across the nation. The act required that municipal airports be included into a state airport development plan in order to receive funds for airport improvements. Nebraska's plan sought to establish three levels of statewide landing facilities. Air landing facilities for light, private aircraft were to be located 15 miles or less from one another; intermediate aircraft 30 miles or less; and large commercial planes a maximum of 50 miles apart. The federal government awarded funds to the states based on population and need. As a condition, the states were required to provide one-half of the costs of land acquisition and construction.⁸⁶

In January of 1951 the federal government increased their participation in land acquisition for airports from 25 to 50 percent. This increase was put into effect retroactively providing a number of municipal airport projects to be eligible for additional funding, known as land refund money. The funds could be used on approved 50-percent federal match construction projects.

The Nebraska Department of Aeronautics processed a total of \$125,000 additional funding for airport development. The land refund money was used for a variety of projects at the airports, including building and repairing hangars, assisting in the construction of administration buildings, paving aprons and taxiways, relocating and erecting beacons, and runway lighting.⁸⁷

Civil Defense

In 1951 the Emergency Aviation Council, a federal program, was formed to recommend and develop a model plan of civil defense for the Civil Defense Office of the U.S. government. The model plan was to be modified and adopted by individual states in order to respond to national emergency. After the federal plan was developed, the Nebraska Department of Aeronautics and the Nebraska Office of Civil Defense established a state plan based on the model. The plan divided the state into six regions with a chief in each region. The chief was responsible for carrying out the details of the emergency plan. Nebraska's regional headquarters were located in Alliance, Norfolk, North Platte, Grand Island, and Lincoln.⁸⁸

Nebraska Aviation Development

In the 1950s the state of Nebraska actively promoted aviation through a variety of programs. A state loan program and standard plans provided inexpensive building improvements, while navigational aids provided better marked airfields. In an effort

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to provide the proper oversight at municipal airports and airfields, the state of Nebraska passed the Airport Authority Act in 1957. The act provided municipalities the means to establish an airport authority board to manage and control the airport and air-navigation facilities. Promotion and policy throughout this decade increased interest in aviation.⁸⁹

Standard Plans and Airport Development

In 1955 the Nebraska Department of Aeronautics established a revolving loan fund of \$50,000 for community airports to construct hangar storage buildings for private aircraft. In association with steel companies, the Nebraska Department of Aeronautics designed standard "T" hangars that cost \$2,000 per space. The Nebraska Department of Aeronautics had standards plans for four-unit multiple "T" hangars (1957), three- and six-unit multiple "T" hangars (1958), and five-unit multiple "T" hangars (1960).⁹⁰

The revolving loan offered by the Nebraska Department of Aeronautics covered 80 percent, or \$1,650 of the cost of construction, whichever was lower. The municipality then had a 10-year period to pay the loan back to the Nebraska Department of Aeronautics. In 1960 the fund was increased to \$170,000 due to the program's popularity.⁹¹

The Nebraska Department of Aeronautics also offered standard plans for steel administration buildings with funding provided by the Civil Aeronautics Administration. The buildings were known as Steelox buildings reflecting the name of the company that produced the wall and roof systems. The buildings were simple in design, typically with a waiting room, office, and restrooms. Plans indicate that the buildings were modest in size, measuring 20 feet by 20 feet or 40 feet by 24 feet, with other variations in size and floor plans available. The steel administration buildings were constructed at a number of

airports, including Imperial, Mitchell, Superior, Ainsworth, David City, Hartington, Ord, Rushville, Stuart-Atkins, and Valentine.⁹²

The Nebraska Department of Aeronautics also suggested standard plans for type "A" metal boundary markers, corner boundary markers, windsock poles, and rotating beacon towers.⁹³

Navigational Aids

The air-marking program continued its objective to air mark every community in Nebraska throughout the 1950s. The program was completed in 1961, and Nebraska ranked fourth in the nation for the number of air markers.⁹⁴

The rotary beacon project started in 1952 after the Civil Aeronautics Administration decided to discontinue operations and maintenance at federally owned intermediate emergency landing strips within Nebraska. The Nebraska Department of Aeronautics acquired \$100,000 worth of lighting from the abandoned fields and then installed 30 rotary beacons across the state by the end of 1957. The beacons provided the state with additional navigational aids for nighttime flying.⁹⁵

In 1955 the Nebraska Department of Aeronautics constructed the first state radio navigational and weather reporting system in the United States. As the Civil Aeronautics Administration reduced funding and services related to navigation and weather services, the Nebraska Department of Aeronautics lobbied successfully to establish a system of six VOR transmitters across the state. A VOR transmits a 360-degree signal that pilots could tune instruments to and easily fly towards. The six stations were located at Ainsworth, Alliance, Beatrice, Kearney, McCook, and Norfolk and provide 24-hour navigational service at a cost of \$15,000 each. Three of the six became operational in 1955; the last three were installed the following year. In 1958

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VORs were added at Wolbach, Scottsbluff, Pawnee City, O'Neill, and Hayes Center. In smaller airports, the Nebraska Department of Aeronautics installed 11 low-frequency Homer, or "H" facilities. Not as reliable as the VOR, the "H" facilities also provided 24-hour operation as a navigational aid, at a much lower cost of \$2,500.⁹⁶

During the 1950s, the U.S. Weather Bureau provided weather monitoring equipment and training to airport VOR operators. The airport operators became trained and certified weather observers and provided hourly weather readings. The readings were communicated over the state teletype system and directed to Omaha to be placed on the national weather circuit to assist pilots in their planning and travels.⁹⁷

Agricultural Aviation and Research

The Department of Aeronautics began funding activities and experiments in agricultural-related aviation in 1950. The Nebraska Department of Aeronautics awarded a \$7,000 grant to the University of Nebraska College of Agriculture to experiment with aerial application of chemicals on crops and land. Specially designed aircraft were given to the program by the Piper Aircraft Corporation, and the pilots and special applicator equipment were furnished by the Nebraska Department of Aeronautics. The goal of the program was to improve the efficiency and safety of crop spraying – historically one of the largest aviation businesses in Nebraska. The program ran from 1950 to 1960, during which time the college received \$104,000 in grants. A conference was held each year to discuss the results from the various experiments being tested. By 1960, there were 79 aerial applicators registered with the Department.⁹⁸

Promotional Activities

The Nebraska Department of Aeronautics funding of the Air Age Education program, begun in 1940, continued until 1958. About \$10,500 per year was spent on the program, in addition to the costs of airplanes and pilots provided by the Nebraska Department of Aeronautics. Between 1958 and 1962 the funds were discontinued, but the Nebraska Department of Aeronautics did provide the airplanes and pilots for field trips and to attend Air Age conferences. In 1962 the program was revised and the operational fund was reestablished.⁹⁹

As part of its promotional activities, the Nebraska Department of Aeronautics promoted the Nebraska-Wyoming State Air Tour, or "Goodwill Air Tour," in 1955. The tour included airplanes of various sizes, lasted 6 days, and traveled to 13 municipal and state airports across Nebraska and southeastern Wyoming. The Nebraska Department of Aeronautics promoted the tour and sent pamphlets to all registered aircraft owners in the state. The tour was planned to accommodate aircrafts of all sizes, with communities along the route providing entertainment, refreshments, and ground transportation.¹⁰⁰

In 1957 the Nebraska Department of Aeronautics initiated a program to increase air traffic throughout the state. The Director of the Nebraska Department of Aeronautics sought cooperation with local chambers of commerce and civic and social clubs with the aim of increasing the volume of aviation. In late May, the Nebraska Department of Aeronautics hired a public relations manager and Norfolk was chosen as the initial area of promotional activity. In June of 1957, North Central Airlines began an Omaha-Norfolk-Sioux City route via Norfolk. The event of the first flight on the new commercial route

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generated press coverage in both Nebraska and South Dakota.¹⁰¹

Also popular were the Nebraska Department of Aeronautics' "Road Shows." This program was hosted by communities throughout the state to attract interest in aviation. The Director of the Nebraska Department of Aeronautics typically addressed the audience on the needs and future of aviation in the state. At each event, new members of the "First Flight Club," persons who had never flown in a commercial aircraft, were identified. As an initiation into the club, new members were awarded free tickets to Omaha and a pair of silver wings commemorating the trip. Another award, the "Flying Cornhusker," was awarded to persons traveling over 50,000 miles on commercial aircraft.¹⁰²

Civilian flying groups, like the Flying Farmers and Ranchers, were supported by the Nebraska Department of Aeronautics. The Flying Farmers and Ranchers, formerly the Flying Farmers, had organized throughout the U.S. and Canada, and held annual fly-in conventions. In 1955 Nebraska registered the highest number of members, at 400, with Kansas, and Minnesota close behind. Other civilian aviation groups included the Nebraska Aviation Trades Association, the Panhandle Cloud Dusters, the Ninety-nines, the Skyriders, the North Platte Fly Club, McCook Flying Club, and the Keekamonga Flying Club.¹⁰³

The Federal Aviation Act of 1958

Due to the increased use and number of aircrafts, the rates of accidents during the 1950s dramatically increased. The accidents highlighted the Civil Aeronautics Administration's inability to control air traffic, and the lack of coordination between civil and military aeronautical agencies. In 1954 there were 3,010 accidents involving small airplanes

with 608 fatalities – of that total, pleasure flying accounted for 1,674 accidents with 364 fatalities. In response, the President in 1956, appointed Edward P. Curtis as Special Assistant for aviation-facilities planning. Curtis was responsible for developing a long-range planning study to address the nation's growing aviation needs, and for recommending the "legislative, organizational, administrative, and budgetary" needs to fulfill the plan. The report, issued in 1957, proposed that one independent agency be created to regulate all aviation service.¹⁰⁴

In 1958 Congress created a central agency responsible for efficient and safe operations in aviation, called the Federal Aviation Administration. The Federal Aviation Administration took over the duties of the Civil Aeronautics Administration; the Civil Aeronautics Board in the regulation of safety; the Airways Modernization Board, which performed research and development; the Air Space Panel's planning activities; and the Air Coordinating Committee.¹⁰⁵ The Federal Aviation Administration was charged with five areas of responsibility: (1) safety regulation; (2) planning, development, and research; (3) establish and regulate aids to navigation; (4) air traffic controls; and (5) foster civil aviation abroad.¹⁰⁶

Commercial Aviation

Beginning after World War II and by the early 1950s, commercial services were available at Lincoln, Omaha, Grand Island, North Platte, and Scottsbluff by Boeing Airline (later United Airlines). Western Airlines and Braniff Airways provided service at Chadron, Alliance, and Norfolk. In order to increase commercial aviation, the Nebraska Department Aeronautics opened negotiations with the Civil Aeronautics Board, the federal agency in-charge of commercial review and licensing in 1955. This move coincided with similar actions from several other Midwestern

Aviation Development in Nebraska, c. 1907-1960 Historic Context

states. The states invited the Civil Aeronautics Board to investigate the need for expanded commercial services, resulting in an investigation known as the "Seven States Investigation."¹⁰⁷

At the investigation, the Nebraska Department of Aeronautics represented the interest of 17 Nebraska communities that filed petitions for better commercial air service. Under its authority, the Civil Aeronautics Board could investigate, establish, or terminate commercial air routes. A strong Nebraska Congressional delegation added pressure on the Civil Aeronautics Board, and it granted all 17 communities commercial air service on a trial 18-month basis. As a result, five routes were awarded to Frontier Airlines, and two routes awarded to North Central Airlines. These routes were operating by July 1959 on a temporary basis with review and continued service based on use and feasibility.¹⁰⁸

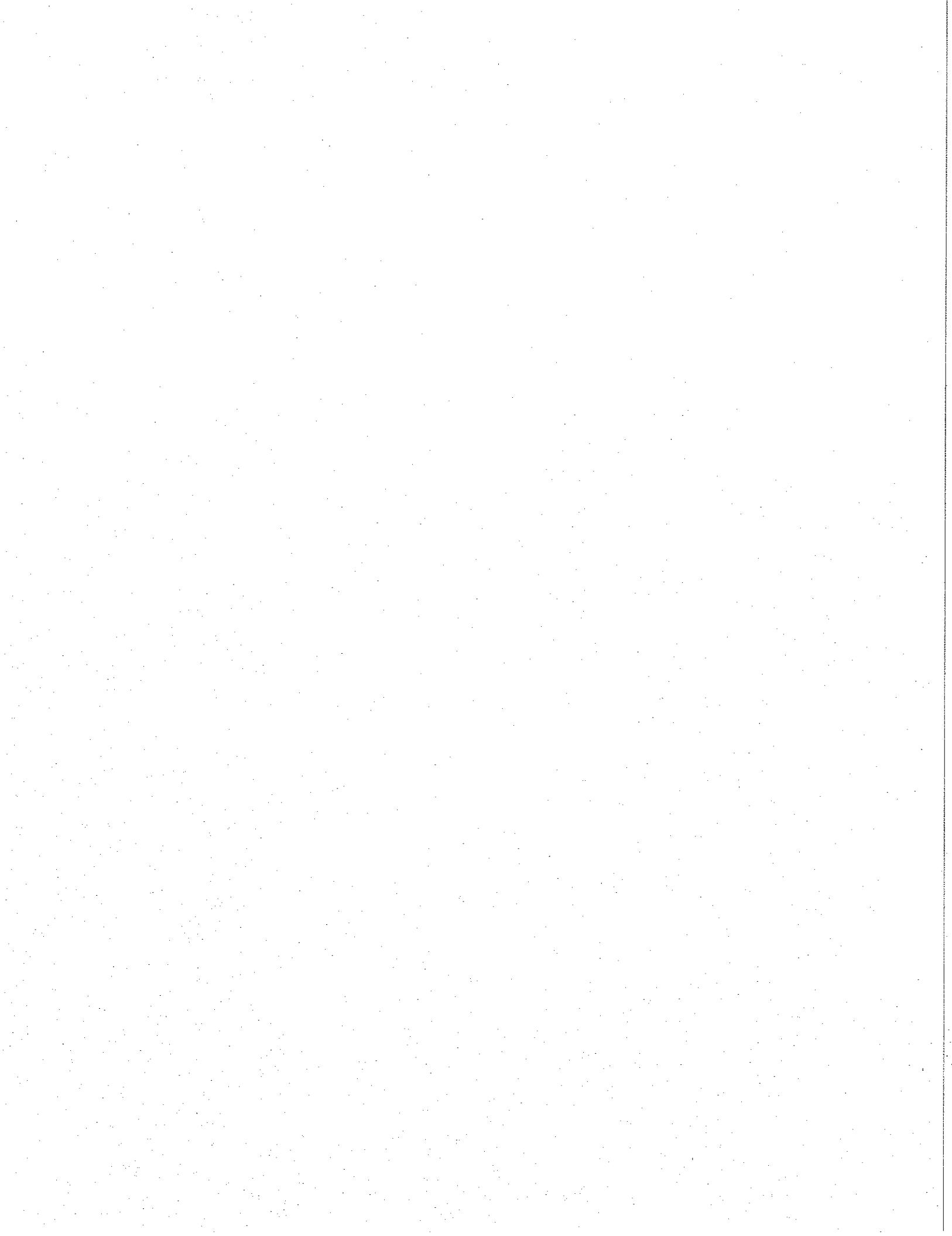
Summary

Like the nation, Nebraska has historically demonstrated a strong interest in the development of aviation. The state is home to significant events in the history of aviation; whether it was experimental gliders and barnstormers who operated during the early years, the development of military airbases, or its role in successfully establishing the transcontinental U.S. airmail route. Perhaps aviation's most visible presence is represented in the many municipal airports located a short distance from communities across the state.

Beginning in the 1920s, both state and federal legislation responded to the proliferation of civil aircraft and landing strips. Increasing aviation regulation, policy, and development became the work of many government agencies in an attempt to increase the safety, national security, and efficiency of the nation's skies. The federal government during

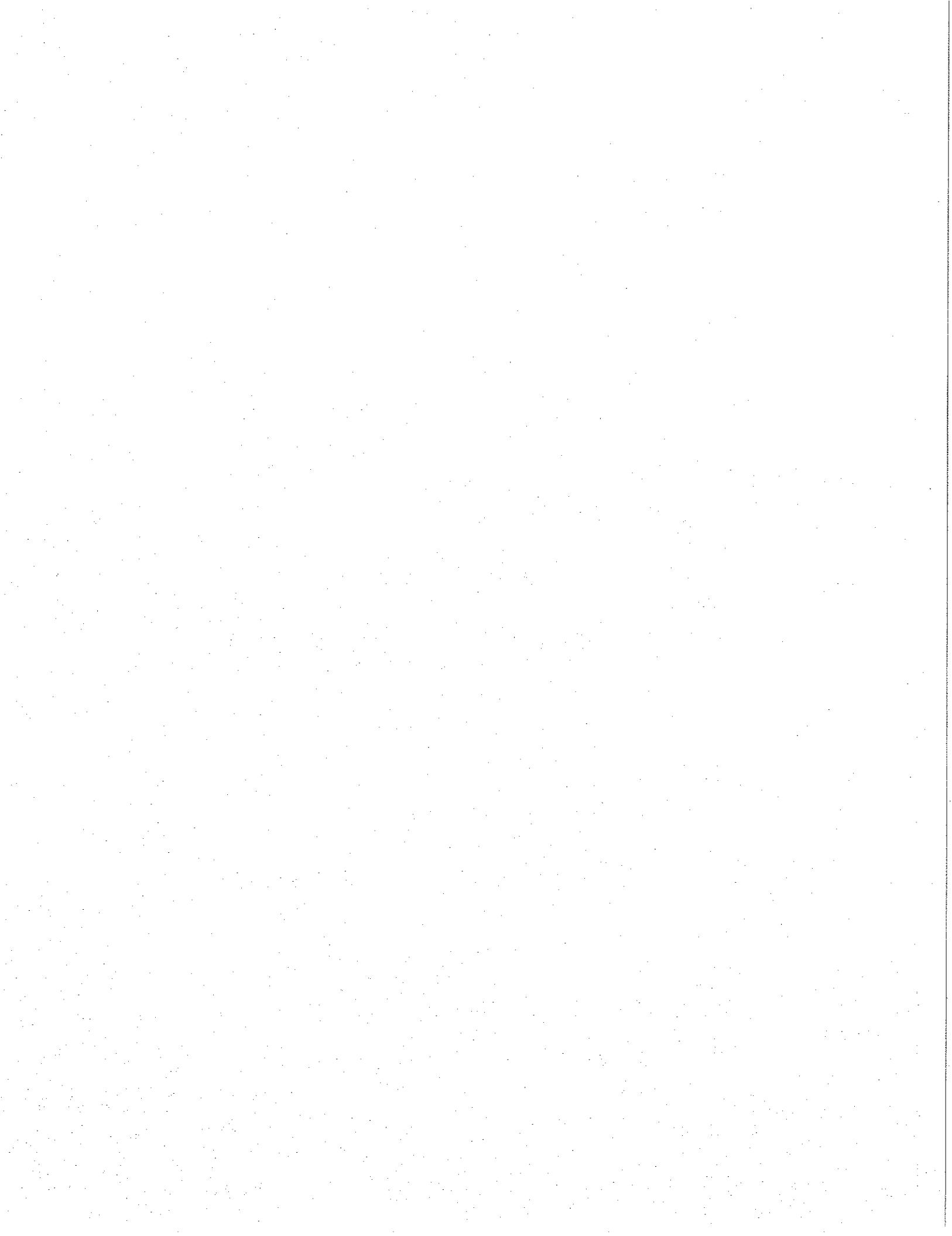
the 1930s fostered continued aviation improvements through various relief programs, increasing numbers of private aviators and airports.

Civil aviation history after the 1940s is marked by the infusion of federal funding and the aggressive promotional activities of the state government. With the advances in aviation technology achieved during the 1950s, the industry became more regulated, sophisticated, and standardized. The municipal airports that dot the Nebraska landscape today are the beneficiaries of decades of local, state, and federal improvements. As a demonstration of these efforts, the appendix includes a list of state and federal projects undertaken in Nebraska between 1940 and 1960.



Chapter 2

National Register Criteria and Property Types



National Register Criteria and Property Types

National Register of Historic Places

The National Register of Historic Places (National Register) is our nation's official list of significant historic properties. Created by the National Historic Preservation Act of 1966, the National Register includes buildings, structures, districts, objects, and sites that are significant in our history or prehistory. These properties may reflect a historically significant pattern, event, person, architectural style, or archaeological site. National Register properties may be significant at the local, state, or national levels.

Properties, including buildings, structures, and objects, can be individually listed on the National Register or they can be components of a historic district. A historic district is a concentration of resources that collectively qualify for listing on the National Register. Components of a historic district may not be individually eligible, but meet National Register criteria as part of a larger complex whole.

To qualify as eligible for the National Register, properties must be at least 50 years old and possess historic significance and integrity. To be listed on the National Register, a property's significance must be demonstrated by one or more of the following criteria established by the National Park Service:

- ▶ *Criterion A – Association with events or activities that have made a significant contribution to the broad patterns of our history.*
- ▶ *Criterion B – Association with the lives of persons significant in our past.*
- ▶ *Criterion C – Association with the distinctive characteristics of a type, period, or method of*

construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

- ▶ *Criterion D – Potential to provide important information about prehistory or history.*

Generally, moved buildings, reconstructed properties, commemorative properties, and properties that have achieved significance within the last 50 years are considered ineligible for listing. However, they may qualify if they fall into one of the following categories:

- ▶ Moved properties that are significant for architectural value.
- ▶ Reconstructed buildings when built in a suitable environment.
- ▶ Commemorative properties with significant design, age, tradition, or symbolic value.
- ▶ Properties less than 50 years old that are of exceptional importance.

Important in the determination of eligibility of a property is historic integrity. Historic integrity is defined as the ability of a property to convey its significance. A property's historic integrity must be evident through a combination of seven historic qualities, including:

- ▶ *Location – Quality of integrity retained by a historic property existing in the same place as it did during the period of significance.*
- ▶ *Design – Applying to the elements that create the physical form, plan, space, structure, and style of a property.*
- ▶ *Setting – Quality of integrity applying to the physical environment of a property.*

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- ▶ *Materials* – Applying to the physical elements that were combined or deposited in a particular pattern or configuration to form a historic property.
- ▶ *Workmanship* – Applying to the physical evidence of the crafts of a particular culture, people, or artisan.
- ▶ *Feeling* – Quality of integrity through which a historic property evokes the aesthetic or historic sense of past time and place.
- ▶ *Association* – Link of a historic property with a historic event, activity, or person. Also the quality of integrity through which a historic property is linked to a particular past time and place.

For a property to retain integrity, its present appearance, location, and setting must closely resemble the original. A property's integrity is tied to its ability to convey a similar appearance, sense, and feeling as it would have historically. For example, an airport hangar moved to a suburban lot would no longer convey an appropriate historic sense of place without runways and other aviation facilities nearby.

Alterations to a building or structure's appearance often diminish the historic integrity of a property. Common alterations to buildings include: the installation of modern siding materials; the replacement of original building elements with modern ones, such as new windows; and the construction of additions. Properties with alterations that affect their historic integrity do not meet National Register criteria.

Nebraska Aviation Property Types

Historic aviation property types can encompass a range of resources, including: air terminals; aircraft; aviation development facilities and production plants; aids to navigation; administrative, educational, and other facilities; and military air bases and air

stations; and missile launch sites and complexes. In Nebraska, small to medium size municipal airports will typically include the following buildings, structures, and objects: an administration building/terminal; a number of hangars of various sizes and types; maintenance shop; beacon; windsock poles; and runway lighting. Some airports also include facilities developed by the WPA or Civilian Conservation Corps; facilities used for training or the Civil Air Patrol; and resources related to the Weather Bureau. In Nebraska, airport development was strongest following World War II. Federal and state funding was used to establish and develop airports throughout the state. The majority of aviation resources date to post-1945.

Standard Plans

The Nebraska Department of Aeronautics and the Civilian Aeronautics Administration developed a number of standard plans for aviation facilities. Most of the plans were developed after World War II to facilitate airport improvements across the state. Standard plans have been identified for the following buildings and structures:¹⁰⁹

- ▶ Administration Buildings

Several standard plans for small metal administration buildings were developed by the Nebraska Department of Aeronautics in the 1950s. These buildings are often referred to on the plans as "Steelox administration buildings" because the buildings are covered with "steelox" brand metal panels. It is believed that the panels were manufactured by the Steelox Company of Mason, Ohio, which began operating in 1934 and introduced the original standing seam roofing system.¹¹⁰ The rectangular plan buildings have a low-pitched, side-gable roof and often have shed roof extensions over the entrances. The buildings have vertical metal siding with multi-pane metal casement windows. The roof is covered with a metal standing seam roof.

National Register Criteria and Property Types

Plans were prepared for administration buildings in a variety of sizes, including 20' x 20'; 40' x 24'; 28' x 56'; and 28' x 48' buildings. Smaller buildings were often planned for expansion; for example, the 20' x 20' standard plan included a "future extension area of about the same size as the original section." The interior layout of the building typically included a waiting room/lobby, office, and men's and women's toilet. Larger buildings also included some of the following additional spaces: operator's and manager's offices, utility room, kitchen and dining room, Civilian Air Patrol pilot's room, and a classroom. Administration buildings based on these standard plans are known to have been built at the following airports: Ainsworth, David City, Hartington, Imperial, Mitchell, Ord, Rushville, Stuart-Atkins, Superior, Valentine.

► Hangars

- Frame hangar 100' x 100' (Civil Aeronautics Authority plans developed in May 1939).
- Four-unit multiple T-hangar: Frame with vertical metal siding (Nebraska Department of Aeronautics plans developed in September 1957).
- Three-unit multiple T-hangar: Frame building with vertical metal siding (Nebraska Department of Aeronautics plans developed in March 1958).
- Six-unit multiple T-hangar: Concrete foundation, frame with vertical metal siding (Nebraska Department of Aeronautics plans developed in March 1958).
- Five-unit multiple T-hangar: Concrete block construction (Nebraska Department of Aeronautics plans developed in August 1960).

► Navigational Aids

- Beacon and 51-foot tower (Nebraska Department of Aeronautics plans developed in October 1951).
- Airport markers, including standard airport corner marker, standard airport range and boundary cones, type "A" metal boundary marker, and type "B" metal boundary marker (Nebraska Department of Aeronautics plans developed in 1947 and 1948).
- Boundary panel marker (Nebraska Department of Aeronautics plans developed in July 1950).
- Windsocks (Civil Aeronautics Authority plan developed in 1938 and Nebraska Aeronautics Commission plans, no date).

Application of National Register Criteria to Aviation-related Property Types¹¹¹

Criterion A – Event

Aviation properties may be associated with a specific event or may represent a pattern of events. Examples of associated events include origins of aviation technology, transportation of airmail, commercial airline development, war-related aviation development or services, engineering research, and air races. In Nebraska, a number of properties at Offutt Air Force Base have been listed on, or are eligible for, the National Register as war-related aviation facilities.

Criterion B – Significant Person

Individuals significant to the history of aviation may include pilots, engineers, airline executives, military officers, airport managers, or government officials. For example, a property may be eligible for its association with Evelyn Sharp, Nebraska's

National Register Criteria and Property Types

best-known aviatrix. Sharp soloed at the age of 16, became a commercial pilot and instructor, and assisted during World War II flying aircraft from factory sites to shipping points.

Criterion C – Design/Construction

Aircraft may be eligible under Criterion C if they are a good representative of an important type or if they represent a significant development in technology or engineering. Air-related buildings, such as terminals and hangars, would likely be eligible under Criterion C as the work of a significant architect or as a representative of an important architectural style or construction method. In Nebraska, the Norfolk Administration Building, completed in 1946, is being nominated to the National Register as a significant example of the Streamline Moderne style.

Criterion D – Information Potential

Criterion D usually refers to archaeological properties; however, aviation wrecks and ruins of facilities may qualify for listing for the potential to yield information.

Integrity Issues

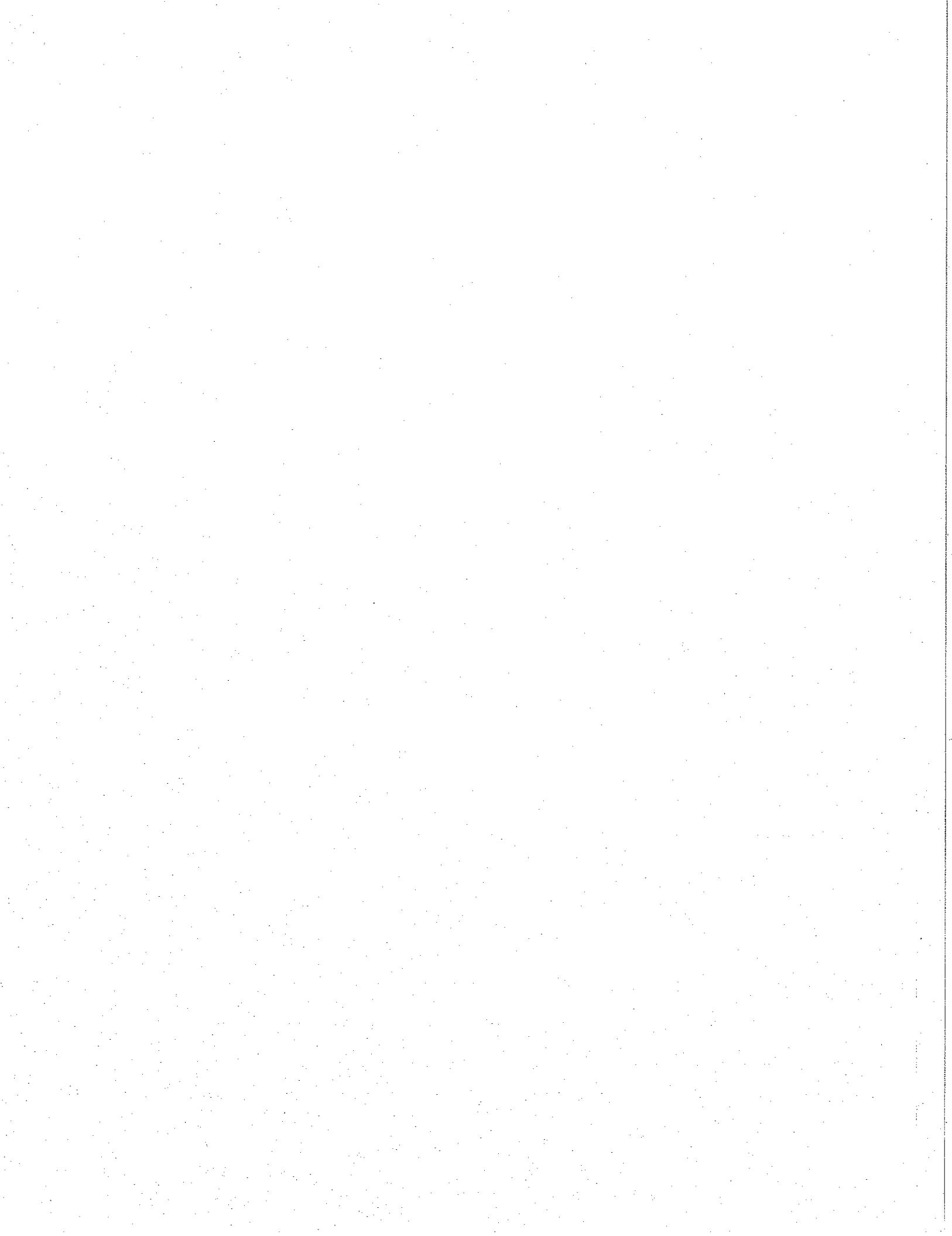
Aviation-related resources have similar integrity issues as other resource types. Aviation resources are largely utilitarian in form, materials, and construction, and are readily modified to serve the functional needs of the facility. Common alterations or changes to the physical appearance of a property that may affect its historic integrity include additions, changes in fenestration, enclosing windows or doors, and replacement of exterior siding materials. For example, hangars are frequently modified with the replacement of original doors and the construction of additions.

The degree that alterations affect the integrity of a resource varies based on the type of resource. Some common alterations, such as small additions, may not diminish the historic integrity of a resource. For example, a hangar or an administration building with an addition may still exhibit sufficient historic integrity to be eligible for the National Register. On the other hand, replacement of original sliding hangar doors with overhead doors would diminish the integrity of a hangar building because the doors are an important visual and characteristic feature. As runways are improved and enlarged, resources are commonly moved. The relocation of a windsock pole, segmented circle, or hangar within the airport property may not diminish its ability to contribute to the overall significance of a complex of resources.

Individually, resources being evaluated for the National Register need to be a primary resource within the airport facility such as an administration building, hangar, or VOR. Individual resources should retain a sufficient degree of historic integrity to be potentially eligible for the National Register. Smaller scale resources, such as a windsock pole or segmented circle, may not be large enough or significant enough to qualify for listing as an individual resource; however, these resources may contribute to the significance of a collection of resources. Resources with some degree of alterations may qualify as a contributing element within a complex of resources. Further field survey of airports and research conducted during a larger statewide survey during Phase II will offer additional guidance on the evaluation of significance and integrity for aviation-related resources.

Chapter 3

Inventory of Surveyed Properties



Chapter 3

Inventory of Surveyed Properties

Survey Methodology

Mead & Hunt conducted a reconnaissance survey of municipal airports at Beatrice, Hastings, Norfolk, and North Platte during March 2001. Prior to fieldwork, Mead & Hunt conducted research at the Nebraska Department of Aeronautics and at each municipal airport. Mead & Hunt interviewed past and present airport managers and local historians to establish the dates of construction, uses, and alterations of historic resources located at each airport.

This survey documents aviation-related buildings, structures, and objects within the main complex of the airport. Surveyed resources were generally constructed before 1961; however, several resources constructed as late as 1965 were included in the survey. In some cases, post-1961 resources resembled resources found in standard plans developed in the 1950s; however, subsequent research revealed post-1961 dates of construction. Features such as ground markers and navigational aids were typically relocated as airport improvements were completed. In some cases, the date of construction attributed from research may represent the relocation date instead of the actual construction date. Due to the frequency of improvements at airports after 1961, runways, aprons, and lighting systems were determined not to be historic and were not surveyed. Information from the files of the Nebraska Department of Aeronautics and the individual municipal airports was used to evaluate the integrity and significance of the airport properties.¹¹²

At the four airports, Mead & Hunt identified and documented a total of 39 historic properties. Resources were evaluated individually and as a collection. In general, secondary resources ancillary to the

development of the airport, like windsock poles and small storage hangars, were not considered individually eligible. Eligibility recommendations are based on the results and comparison of four municipal airports; however, information gained from a larger statewide survey may lead to adjustments in future eligibility recommendations. Two individual properties, and one district are being recommended as potentially eligible for the National Register. An additional four properties are recommended to be re-evaluated when they reach 50 years of age.

Beatrice Municipal Airport, Gage County

Overview

Beatrice Municipal Airport is located north of Beatrice along U.S. Highway 77, in Gage County. The airport is located in Sections 16, 22, and 28, Township 4 North, Range 6 East and consists of approximately 640 acres of land. The airport has two concrete runways – the longest runway is oriented north-south, and a smaller runway is oriented northwest-southeast.

The airfield at Beatrice was established in late 1939, and planning for improvements at the airfield began in July of 1940 with the establishment of a Civilian Training Program. The airfield began with 160 acres that were purchased by the Beatrice Airport Corporation, a private organization formed to develop and promote the airport at Beatrice. The site was approved by the Civil Aeronautics Administration and the Nebraska Department of Aeronautics in May 1941.¹¹³

During the 1940s, Beatrice was home to several industries, including factories producing parts to construct Cessna airplanes. Weiss Flying Service, located at

Inventory of Surveyed Properties

the airport, trained army flyers under a contract with the Civil Aeronautics Administration, and the Beatrice High School operated as a ground school contractor to teach high school students on the basics of aviation. Industry, manufacturing, and training activities greatly increased the volume of air traffic and stimulated airport development in Beatrice. The Nebraska State Aeronautics Commission notified the city that the WPA was interested in funding and building airport improvements. To qualify for WPA funds, however, the airport had to be owned by a municipality.¹¹⁴

Municipal bonds were raised and the city of Beatrice purchased the airport from the private corporation, plus an additional 235 acres in 1942. That same year, the WPA and the Civil Aeronautics Authority approved plans for improvements at the airfield. An airport plan was developed by W.B. Boucher, engineer, of Scott and Scott of Lincoln. Initial development consisted of grading, drainage, and paving. These planned improvements amounted to a total of \$489,399.71; in 1943, \$73,172.91 worth of improvements had been completed with WPA funds and labor under WPA Project O.P. 265-1-81-120. However, in the fall of 1943, WPA labor was withdrawn, and the Roberts Construction Company was hired to complete the project, while the city continued to provide labor and funding. Later that year, all WPA funding was withdrawn and the city financed the uncompleted projects.¹¹⁵

The airport was officially dedicated in September of 1946. By the late 1940s, airport buildings included the large Hangar – Building No. 5 (GA03-355); the Quonset Storage Building – Building No. 4 (GA03-356); the two Quonset Maintenance Shops – Building Nos. 2 and 3 (GA03-357

and GA03-358); and the six-unit, "Multi-T" Hangar (GA03-359). The Quonset Storage Building – Building No. 4 was used to house the office and Mid-West Airlines, and the Hangar – Building No. 5 was used as the flight training and administration facility; while the Quonset Maintenance Shop – Building No. 3 was a sheet metal shop and Building No. 2 was a maintenance shop. The airport also had a rotating beacon light (GA03-354). In 1949 a small commercial aircraft company offered service to Omaha, Lincoln, Fairbury, Hastings, Grand Island, Kearney, Lexington, McCook, and North Platte.¹¹⁶

During the 1950s, the continued growth of the airport led to a new brick terminal building (GA03-353) with a lobby, restrooms, and offices. At this time, the airport consisted of two concrete runways, measuring 3,800 feet by 100 feet, and two turf runways (2,900 feet by 150 feet and 3,550 feet by 150 feet). By 1954 the city hired a full-time airport manager, the airport hosted a flight school, and Mid-West Airlines offered commercial flights. Other activities included charter service, crop spraying, air ambulance service, and rural newspaper drop delivery. The airport housed approximately 22 planes – 4 corporate, 11 private, 6 FBO, and 1 Civil Air Patrol. Medium-intensity lighting was installed at the airport in 1955 and 1956, and the Nebraska Department of Aeronautics installed a VOR (GA03-349). By 1958, a runway extension with additional lighting was planned. Frontier Airlines began commercial service from Omaha, Lincoln, Beatrice, St. Joseph (Missouri), and Kansas City (Missouri) in 1959. There is presently no commercial service into Beatrice Municipal Airport; however, charter, corporate, and air freight activities are frequent.¹¹⁷

Inventory of Surveyed Properties

Survey Results

The survey identified six buildings and six structures with historic integrity. The airport also includes several modern pole-shed hangars, and smaller modern structures.

Beatrice Municipal Airport – Surveyed Properties

Resource Name/Number*	Date of Construction	NeHBS Site No.
Administration Building – Building No. 1	1950, 1977	GA03-353
Hangar – Building No. 5	c. 1943	GA03-355
Maintenance Shop – Building No. 2	c. 1960	GA03-358
Quonset Sheet Metal Shop – Building No. 3	1946	GA03-357
Quonset Storage Building – Building No. 4	1946	GA03-356
“Multi-T” Hangar	1949	GA03-359
Rotating Beacon and Tower	1947	GA03-354
Visual Omni Range (VOR)	1956	GA03-349
Segmented Circle	c. 1965	GA03-350
Windsock Pole	c. 1965	GA03-351
Tetrahedron	c. 1965	GA03-352
Jet Aircraft Memorial	c. 1963	GA03-360

* Building numbering is based on Nebraska Department of Aeronautics' airport layout plans.

Administration Building – Building No. 1, 1950 (1977 addition), GA03-353

This one-story brick administration building was constructed in 1950 as Civil Aeronautics Administration Project No. 9-25-031-002. The building has a stepped roof and a concrete foundation; five large picture windows and two entrances facing the airfield on the west elevation; one picture window each on the north and south elevations; and one large picture window, glass block windows, and an entrance on the east elevation. The building was designed by Harold Hoskins and Associates, Inc., from Lincoln and the contractor was A.J. Meerse

of Ogallala. Alterations include a 1977 addition to the north and west elevations that was constructed in similar materials and style as the original. The addition extends outward several feet to the west and includes a second entrance. The building exhibits diminished historic integrity due to the large addition.¹¹⁸

Hangar – Building No. 5, c. 1943, GA03-355

This frame hangar is clad in metal siding with exposed exterior wall bracing. The building was constructed by Davis and Wilson of Lincoln. The main section measures 60 feet by 80 feet, and was used as

Inventory of Surveyed Properties

a hangar. The building was built with an attached 14-foot by 60-foot lean-to that housed an office, Civil Air Patrol classroom, restrooms, and storage. Two subsequent small additions were made to the south elevation, and exterior wall bracing was added prior to 1953. Because construction occurred during World War II, the hangar was constructed by local labor with materials from a barn on the airport property. Use of additional material was granted by the War Production Board.¹¹⁹

Maintenance Shop – Building No. 2, c. 1960, GA03-358

This 60-foot by 65-foot metal building was constructed between 1953 and 1969.¹²⁰ The building features several multi-pane windows, a rounded roof, and is clad in corrugated sheet metal. A large, modern overhead door may have been added on the south facade.

Quonset Sheet Metal Shop – Building No. 3, 1946, GA03-357

This 40-foot by 80-foot Quonset building was constructed in 1946 and housed a sheet metal shop. The building features multi-pane windows, a concrete slab foundation, and is clad with corrugated metal siding. The building's characteristic large rolling doors were replaced with a large modern overhead door.

Quonset Storage Building – Building No. 4, 1946, GA03-356

This small Quonset building was constructed in 1946 and used as the office for Mid-West Airlines during the late 1940s. The building measures 20 feet by 40 feet, and appears to have good integrity.

"Multi-T" Hangar, 1949, GA03-359

This long metal building was constructed in 1949 and includes six individual spaces, many in "T" shapes, to store planes. The building measures 32 feet by 180 feet, and is

constructed of corrugated metal with a flat roof. The building appears to have good integrity.

Rotating Beacon and Tower, 1947, GA03-354

This structure consists of a pyramidal tower with a double-lens, rotating beacon light measuring approximately 2 feet in diameter. The tower and beacon stand to the south of the main hangar – Building No. 5 (GA03-355), and appear to have good integrity.

Visual Omni Range (VOR), 1956, GA03-349

This round metal structure is approximately 20 feet high. The bottom half is painted white with red diagonal stripes. The top half is dome-shaped with a door facing southeast. The VOR, used for aviation navigation, is located north of the intersection of the two runways.

Segmented Circle, c. 1965, GA03-350

This structure consists of approximately 15 metal ground markers. The markers are approximately 2½ feet high, constructed in an A-shaped configuration, and covered with corrugated metal. The ground markers are painted alternating colors of red and white. The ground markers match standard plans developed by the Nebraska Department of Aeronautics during the 1950s, but were likely installed during the 1960s.

Windsock Pole, c. 1965, GA03-351

This red metal pole is approximately 20 feet high with four lights extending from the top with a windsock below. The pole is located in the center of the Segmented Circle.

Tetrahedron, c. 1965, GA03-352

This structure consists of three intersecting corrugated metal pieces that represent the shape of an airplane. The structure turns atop a metal pole, indicating wind direction.

Inventory of Surveyed Properties

This structure may have been moved to this location c. 1965.

Jet Aircraft Memorial, c. 1963, GA03-360

The entrance to the airport is marked by a F105 jet aircraft. The aircraft is mounted on metal supports connected to concrete footings. The memorial was moved in 1993 when U.S. Highway 77 was widened.

National Register Recommendations Potential Historic District

Five buildings, and one structure at the Beatrice Municipal Airport may qualify for the National Register as contributing elements of a historic aviation complex:

- ▶ Administration Building – Building No. 1, 1950, 1977 (GA03-353)
- ▶ Hangar – Building No. 5, c. 1943 (GA03-355)
- ▶ Quonset Storage Building – Building No. 4, 1946 (GA03-356)
- ▶ Quonset Sheet Metal Shop – Building No. 3, 1946 (GA03-357)
- ▶ "Multi-T" Hangar, 1949 (GA03-359)
- ▶ Rotating Beacon and Tower, 1947 (GA03-354)

The airport was largely developed during World War II in order to accommodate a Civilian Pilot Training school, and portions were constructed with the aid of the WPA. As such, these buildings may be eligible under *Criterion A: History* as an example of government funding to airports during World War II and as a Civilian Pilot Training flight school. The contributing properties were constructed between c. 1943 and 1950.

Individual Properties

- ▶ *Hangar – Building No. 5, c. 1943, GA03-355*
This building is recommended as potentially eligible for the National Register under *Criterion A: History* for its association with government funding during World War II, and as a flight school for the Civil Air Patrol.
- ▶ *Visual Omni Range (VOR), 1956, GA03-349*
As one of the few airports in Nebraska to have VORs installed before 1960, this structure is recommended to be reevaluated when it reaches 50 years of age under *Criterion C: Engineering* as an intact example of a navigational aid.

Hastings Municipal Airport, Adams County Overview

The Hastings Municipal Airport is located adjacent to the city of Hastings in Adams County. The airport lies along West 12th Street to the northwest of the city. The airport is located in Section 3, Town 7 North, Range 10 West. The airport consists of two runways – the larger runway is orientated northwest-southeast, and a smaller runway runs northeast-southwest. The airport includes approximately 504 acres of land, surrounded by a mix of residential development and agricultural land use.

In 1938 the Hastings Municipal Airport had a turf airfield and three buildings: the 1930 Hangar – Building No. 1 (GA04-003); the 1936 Administration Building (AD00-133); and a manager's house.¹²¹ The 1936 Administration Building was constructed by the WPA. By 1941, an airport Master Plan prepared by city engineer P.T. Naylor, called for additional hangars to be constructed to the northeast of Hangar – Building No. 1 and showed the future site of the Terminal Building (AD00-139). The airport location was officially approved by the Civil Aeronautics Administration and the

Inventory of Surveyed Properties

Nebraska Department of Aeronautics in October of 1947. Beginning in 1947 through 1952, drainage, concrete paving, and grading improvements were made on the northwest-southeast runway. The work was completed by Harold Hoskins and Associates of Lincoln under Civil Aeronautics Administration Project No. 9-25-022-801.

In the early 1950s, the airport consisted of one concrete runway measuring 4,000 feet by 100 feet, and two turf runways measuring 3,750 feet by 300 feet and 3,400 feet by 300 feet. The airport was served by Mid-West Airlines for commercial flights. The airport also offered charter service, flight instruction, agricultural spraying and Farm-Air activities, and housed 35 aircrafts. In 1952 a medium-intensity lighting system was installed at the airport under Civil Aeronautics Administration Project No. 9-25-022-202.¹²²

Between 1960 and 1965, extensions were added to the runways to accommodate jet aircraft, and in 1966 the Terminal Building was completed. By 1969 Hastings Skyways, Inc., was also operating flights at the airport. New runway lighting was installed in 1972 under Civil Aeronautics Administration Project No. 8-31-0040-01. The airport once hosted a U.S. Weather Bureau station, but during the early 1990s the equipment was removed and modern, automated equipment was installed.

Survey Results

The field survey identified six buildings and five structures with historic integrity. The property also includes several modern pole-shed hangars and smaller modern structures.

Hastings Municipal Airport – Surveyed Properties

Resource Name/Number*	Date of Construction	NeHBS Site No.
Hangar – Building No. 1	1930	AD04-003
Administration Building	1936	AD00-133
Terminal Building	1966	AD00-131
Quonset Hangar – Building No. 12	c. 1945	AD00-132
Quonset Maintenance Shop – Building No. 2	1954	AD00-134
"Multi-T" Hangar – Building No. 4	1959	AD00-129
Visual Omni Range (VOR)	c. 1955	AD00-137
Rotating Beacon and Tower	c. 1945	AD00-136
Segmented Circle	c. 1950	AD00-135
Windsock Pole	c. 1950	AD00-138
Jet Aircraft Memorial	1966, 1995	AD00-130

* Building numbering is based on Hastings Municipal Airport layout plan.

Hangar – Building No. 1, 1930, AD04-003

This hangar is constructed of brick with a curved metal, stepped-gable roof. The north and south elevations feature several large multi-pane windows. Details include pilasters between the windows, and brick relief on the front building's facade corners. The hangar retains its large sliding doors on the front facade. The main 1930 section of the hangar has two, one-story brick additions built between 1943 and 1948 on the rear elevation, and a one-story brick addition on the northwest corner that was built between 1948 and 1954.

Administration Building, 1936, AD00-133

Constructed by the WPA, this one-story, frame building has a clipped-gable roof with sweeping, a low-pitched porch roof with a poured concrete deck. The building has six-over-one windows, wood siding, and a concrete foundation. The front facade features a large, exterior stone chimney with a plaque stating, "USA, 1936, WPA." Alterations include replaced porch posts, an enclosed porch on the north elevation (1977), and replacement windows. The alterations diminish the property's historic integrity. Also located on the property, to the southeast of the building near 12th Street is a stone marker constructed in similar style as the exposed chimney. Three decorative concrete light posts are located to the north of the building.

Terminal Building, 1966, AD00-131

This building is constructed of pebble-faced concrete with a flat roof. Large ground-to-ceiling windows face north and south. The building has a concrete foundation and appears to have few alterations. The terminal building was designed by Hoskins-Stippich, an architecture and engineering firm in Lincoln.

Quonset Hangar – Building No. 12, c. 1945, AD00-132

This corrugated metal Quonset hangar was constructed between 1943 and 1948 by the Kansas-Nebraska Natural Gas Company. The building has its original multi-pane windows and sliding doors and sliding door tract extensions on its south and east facades. The building rests on a concrete foundation. In 1974 the airport purchased this building from the Kansas-Nebraska Natural Gas Company. In 1975 overhead doors were installed behind the sliding doors and the building was converted to the Crash-Fire-Rescue storage building.

Quonset Maintenance Shop – Building No. 2, 1954, AD00-134

This 59-foot by 64-foot metal hangar was constructed in 1954 by the J.M. McDonald Company of Hastings. The building has a curved metal roof, a concrete slab foundation, and is clad in corrugated metal siding. The building retains its original multi-pane windows. The hangar has a one-story, attached, 12-foot by 64-foot addition to the north, and the building's two metal sliding doors have been replaced by a large, fiberglass overhead door.

"Multi-T" Hangar – Building No. 4, 1959, AD00-129

This six-unit, multiple T-shaped hangar building has a wooden frame with corrugated metal siding. The building is rectangular in plan with a gable roof and a concrete slab foundation. The building measures 185 feet by 32½ feet, and retains sliding doors and the sliding door tract extensions. Recent modifications include new siding in 1960, and new sliding doors in 1976.

Inventory of Surveyed Properties

Visual Omni Range (VOR), c. 1955, AD00-137

This round metal navigational aid structure is approximately 25 feet high. The bottom half consists of round riveted metal plates with a small door. The top half is cone-shaped. The structure is skirted by an elevated metal ground-plane that is supported by metal piers. The VOR is located west of the intersection of the airport's two runways.

Rotating Beacon and Tower, c. 1945, AD00-136

This structure consists of a metal tower and a dual, green-and-white lens, 24-inch, rotating beacon. The tower and beacon were dismantled and moved to its current location at the airport in 1952.

Segmented Circle, c. 1950 (moved 1972), AD00-135

This structure consists of approximately 15 metal ground markers. The markers are approximately 2½ feet high, constructed in an "A"-shaped configuration and covered with corrugated metal. The ground markers are painted alternating colors of red and white. The ground markers match standard plans developed by the Nebraska

Department of Aeronautics during the 1950s. In 1972 the segmented circle was installed at its present location.

Windsock Pole, c. 1950, AD00-138

This red metal pole, is approximately 20 feet high with a windsock and four lights extending from its top. The pole is located in the center of the Segmented Circle.

Jet Aircraft Memorial, (1966, aircraft; 1995, memorial), AD00-130

This F-4D jet fighter aircraft was built in 1966 and retired from military use in 1995. The aircraft is now mounted as a memorial to military veterans and serves to mark the entrance to the 1966 terminal building.

National Register Recommendations

Potential Historic Districts

No potential historic aviation district was identified at the Hastings Municipal Airport. The alterations to historic properties diminished the integrity of the collection as a whole, and the intrusion of modern resources diminishes the setting.

Individual Properties

- **Hangar – Building No. 1, 1930, AD04-003**
This building is recommended as potentially eligible for the National Register under Criterion C: Architecture as a distinctive example of an early airport hangar with good integrity. Additions to the hangar are constructed with the same material as the original building, fall within the historic period, and are located to the rear of the building.
- **Visual Omni Range (VOR), c. 1955, AD00-137**
As one of the few airports in Nebraska to have VORs installed before 1960, this structure is recommended to be reevaluated when it reaches 50 years of age under Criterion C: Engineering as an intact example of a navigational aid.

Karl Stefan Memorial Airport, Norfolk, Madison County Overview

The Karl Stefan Memorial Airport is located along 13th Street, southwest of the city of Norfolk in Madison County in Section 9, Township 23 North, Range 1 West. The early development of the airport at Norfolk began after Andy Risser established a flying school in March 1, 1928. By 1934 Risser had leased 160 acres south of Norfolk on U.S. Highway 81 centered on the northeast corner of the current airport grounds.

Activity at the Norfolk airfield continued to increase, and between 1935 and 1939 the Federal Emergency Relief Act made improvements to the facilities. On July 7,

Inventory of Surveyed Properties

1942, the WPA, in partnership with the city of Norfolk, received approval for the construction of a municipal airport at this site and an airport design by the Airways Engineering Division of the Civil Aeronautics Administration was drafted in 1943. Contracted work included clearing the site, runway construction and paving, and drainage work. The Norfolk Municipal Airport was dedicated on October 22, 1944.¹²³

Nebraska Congressman and later Senator Karl Stefan, a Norfolk resident and an avid aviation supporter used his political clout to ensure continued funding for the airport, including the construction of the Administration Building, and to secure special programs, such as the installation of an experimental Weather Bureau station. The Norfolk Airport earned distinction for its role as headquarters for "Operation Snowbound" during the winter of 1948-

1949. This program performed aerial drops of food to stranded Nebraskans in an effort to provide relief to farmers and livestock, and occasionally airlifted the sick to hospitals for treatment.¹²⁴

In the early 1950s, the airport consisted of two asphalt runways measuring 5,800 feet by 150 feet, and Mid-West Airlines and Skyways, Inc., offered commercial and charter flights. In 1953 Mid-West Airlines and Braniff Airlines recorded a total of 627 passengers flying out of Norfolk. The Norfolk Airport was dedicated the Karl Stefan Memorial Airport on September 29, 1955.¹²⁵

Survey Results

The survey identified five buildings, six structures, and one object with historic integrity. The property also includes several modern pole-shed hangars, and smaller modern structures.

Karl Stefan Memorial Airport – Surveyed Properties

Resource Name/Number*	Date of Construction	NeHBS Site No.
Administration Building	1946	MD00-023
Hangar Complex	c. 1950	MD00-155
"Multi-T" Hangar	c. 1950	MD00-157
Hangar – Building No. B2	c. 1948	MD00-154
Electrical Vault	c. 1948	MD00-153
Generator Structure	c. 1960	MD00-159
Visual Omni Range (VOR)	1955	MD00-150
Rotating Beacon and Tower	c. 1950	MD00-160
Karl Stefan Memorial Sign	1955	MD00-156

Inventory of Surveyed Properties

Karl Stefan Memorial Airport – Surveyed Properties

Resource Name/Number*	Date of Construction	NeHBS Site No.
Segmented Circle	c. 1950	MD00-151
Windsock Pole	c. 1950	MD00-152

* Building numbering is based on Karl Stefan Memorial Airport layout plan.

Administration Building, 1946, MD00-023

The concrete building faces east and has a cross plan with a flat roof. Two, one-story wings flank a centrally placed, two-story tower. Exterior wall surfaces are clad in poured concrete with vertical and horizontal scoring. The horizontal lines have been dyed to emphasize this detail. All of the corners of the building are curved. The main, or east, facade displays a symmetically arranged fenestration pattern. Two, nine-pane, round windows bracket paired three-pane rectangular openings on the one-story wings. The terminal is an excellent example of the Streamline Moderne style applied to airport architecture. A 1977 addition to the north elevation was constructed for the U.S. Weather Bureau. The addition was constructed in the same style and materials as the original section, and detracts little from the historic integrity of the building.

Hangars, c. 1950, MD00-155

This building consists of two attached hangars and a small office, which are constructed with corrugated metal, flat roofs, and concrete slab foundations. The complex is painted in red-and-white stripes and features folding overhead doors. The small office section has two 1950s-style windows and one replacement window.

"Multi-T" Hangar, c. 1950, MD00-157

This long metal building was constructed in c. 1950 and includes 12 individual spaces to store planes. The building is constructed of corrugated metal with a flat roof.

Hangar – Building No. B2, c. 1948, MD00-154

This building is constructed with concrete block with a flat roof and concrete slab foundation. The front facade of the building has an enclosed hangar door space, which now features three overhead doors. The front and side elevations have multi-pane windows.

Electrical Vault, c. 1948, MD00-153

This structure is constructed with brick with a flat roof and concrete slab foundation. The structure has one enclosed window, a louvered vent panel, and a modern entrance door.

Generator Structure, c. 1960, MD00-159

This structure is constructed with concrete block, has a flat roof and a concrete slab foundation. The structure has a louvered vent panel on the south facade, and an entrance door on the west facade.

Visual Omni Range (VOR), 1955, MD00-150

This round metal navigational aid structure is approximately 25 feet high. The bottom half consists of round riveted metal plates with a small door. The top half is cone-shaped. The structure is skirted by an elevated metal ground-plane that is supported by metal piers. The VOR is located west of the

Inventory of Surveyed Properties

intersection of the airport's two runways, and was relocated north to its present location.

Rotating Beacon and Tower, c. 1950, MD00-160

This structure consists of a pyramidal tower with a double-lens, rotating beacon light measuring approximately 2 feet in diameter. The beacon was removed from its original tower, and the structure was relocated to the southeast on another tower at its present location.

Karl Stefan Memorial Sign, 1955, MD00-156

This entrance sign was constructed for the airport's dedication of the Karl Stefan Memorial Airport. The wood sign rests on a brick foundation and footing at the street entrance of the airport.

Segmented Circle, c. 1950, MD00-151

This structure consists of approximately 15 metal ground markers. The markers are approximately 2½ feet high, constructed in an "A"-shaped configuration, and covered with corrugated metal. The ground markers are painted alternating red and white. The ground markers match standard plans developed by the Nebraska Department of Aeronautics during the 1950s.

Windsock Pole, c. 1950, MD00-152

This red metal pole is approximately 20 feet high with a windsock and four lights extending from its top. The pole is located in the center of the Segmented Circle.

National Register Recommendations

Potential Historic District

No potential historic aviation districts were identified at Karl Stefan Memorial Airport due to alterations to historic properties, and the intrusion of several modern resources at the airport.

Individual Properties

- ▶ *Administration Building, 1947, MD00-023*
This building is currently being nominated for the National Register under *Criterion A: History*, for its role in regional development, and under *Criterion C: Architecture* as an example of the Art Moderne style applied to an airport administration building.
- ▶ *Visual Omni Range (VOR), 1955, MD00-150*
As one of the few airports in Nebraska to have VORs installed before 1960, this structure is recommended to be reevaluated when it reaches 50 years of age under *Criterion C: Engineering* as an intact example of a navigational aid.

Lee Bird Memorial Airport, North Platte, Lincoln County

Overview

Lee Bird Memorial Airport is located between the North Platte River and U.S. Highway 30, east of North Platte in Lincoln County. The airport is located in Section 6, Township 13 North, Range 29 West. The North Platte Air Terminal Company was formed by 21 local North Platte businessmen in September of 1920. The company purchased land for an airfield for the U.S. Mail Service and local aviation enthusiasts. The airport was operating in 1920, at which time the airport buildings were located to the west of the present main complex of airport buildings. During February of 1921, Jack Knight landed at the airport during the first continuous airmail flight. In a 1937 airport survey, the airport had three runways.

During the 1940s the airport served as a Civilian Pilot Training Program flight school. At this time the northwest-southeast and north-south runways were paved in concrete. During the war, the airport operated as an Army Airfield and at the end of the war ownership was transferred to the

Inventory of Surveyed Properties

city of North Platte. In May of 1941 the city of North Platte dedicated the airport and field in honor of Lee Bird, a military pilot who died during training for World War II. The airport site was officially approved by the Civil Aeronautics Administration in 1949.

In 1951 the airport consisted of three runways – the longest was oriented northwest-southeast measuring 5,545 feet by 100 feet, a north-south runway measuring 4,434 feet by 100 feet, and an east-west runway measuring 4,599 feet by 100 feet; a beacon; runway lights; and several steel and frame hangars.

In 1952 architect C.C. Coursey from North Platte designed a new terminal building along Highway 30, to the east of the early airport buildings. Brown and Denesia, a construction company from Broken Bow, built the brick terminal building with terra cotta coping under Civil Aeronautics Administration Project No. 9-25-026-001. The new terminal building was also used to house a safety unit of the Civil Aeronautics

Administration, and an office of the U.S. Weather Bureau. The airport was served by United Airlines, Mid-West Airlines, Flying Tigers Airline, and Clinch Flying Service for commercial charter flights at which time the airport also had a flight school.¹²⁶

During the early 1960s a large hangar building located to the west of the present complex was moved to the east of the Terminal Building. After the building was moved, Robert L. Murphy, architect from North Platte, designed an addition for the hangar. In 1969 Robert L. Murphy also designed a 50-foot by 60-foot addition to the 1950 terminal building. A long northwest-southeast runway was added to the east of the existing field after 1977 to accommodate the increased number and size of aircraft at the airport.

Survey Results

The survey identified two buildings and three structures that have retained historic integrity. The airport property also includes several modern pole-shed hangars, and smaller modern maintenance structures.

Lee Bird Memorial Airport – Survey Results

Resource Name	Date of Construction	NeHBS Site No.
Terminal Building	1952	LN00-235
Maintenance Building	c. 1960	LN00-234
Upper Air Shelter	1956	LN00-236
Rotating Beacon and Tower	c. 1940	LN00-237
Segmented Circle	c. 1960	LN00-238

Inventory of Surveyed Properties

Terminal Building, 1952, LN00-235

This brick building was designed by architect C.C. Coursey from North Platte and built by Brown and Denesia, a construction company from Broken Bow. The building once featured terra cotta details. In 1969 Robert L. Murphy, architect from North Platte, designed a 50-foot by 60-foot addition to the 1950 terminal building. Later, the terminal building was connected to an adjacent brick building and a large, modern car portico was added – both evident on the front facade. To the rear of the terminal building is a large c. 1970 overhang addition. Several alterations to this building have diminished its historic integrity.

Maintenance Building, c. 1960, LN00-234

This concrete block utilitarian building was constructed c. 1960. The building has a flat roof, and a concrete slab foundation, with one window, an entrance door, and two large overhead doors.

Upper Air Shelter, 1956, LN00-236

Constructed in 1956, the upper air shelter consists of two structures. The larger component consists of rounded metal plates, riveted together forming a dome-shaped structure. This metal dome rests on a brick structure that features an overhead door, several louvered vent panels, and an entrance door. To the east of the larger structure is a smaller sized similar structure resting on concrete block. Both structures are used by the U.S. Weather Bureau to release weather air balloons into the atmosphere.

Rotating Beacon and Tower, c. 1940, LN00-237

This structure consists of a pyramidal tower with a double-lens, rotating beacon light measuring approximately 2 feet in diameter.

Segmented Circle, c. 1960, LN00-238

This structure consists of approximately 15 metal ground markers. The markers are approximately 2½ feet high, constructed in an "A"-shaped configuration, and covered with corrugated metal. The ground markers are painted alternating red and white. The ground markers match standard plans developed by the Nebraska Department of Aeronautics during the 1950s.

National Register Recommendations

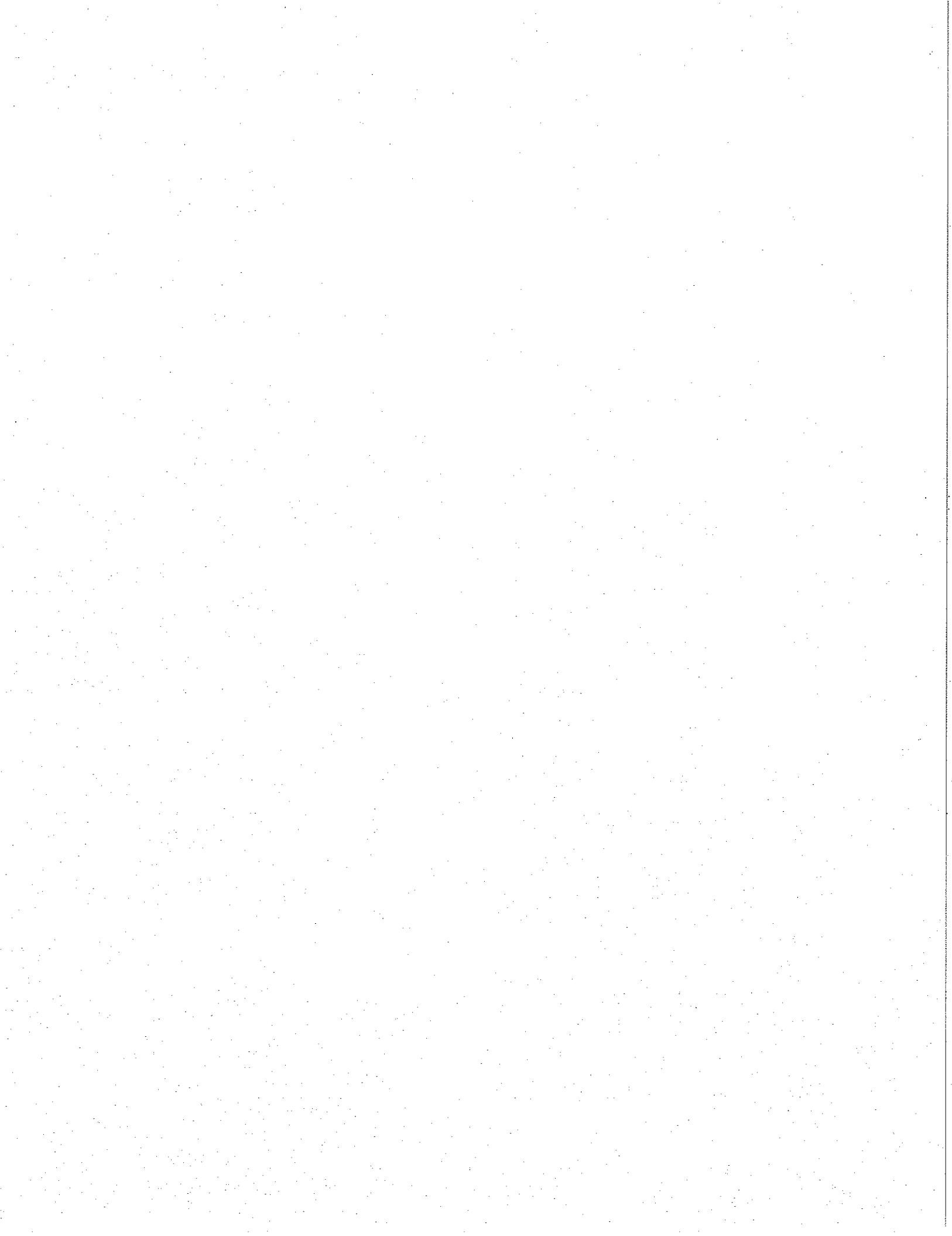
Potential Historic District

No potential historic aviation district was identified at Lee Bird Memorial Airport. The complex does not retain the cohesiveness and concentration of historic resources necessary to be eligible as a historic district. Alterations to the terminal building and the intrusion of modern resources has diminished the integrity of the complex as a whole.

Individual Properties

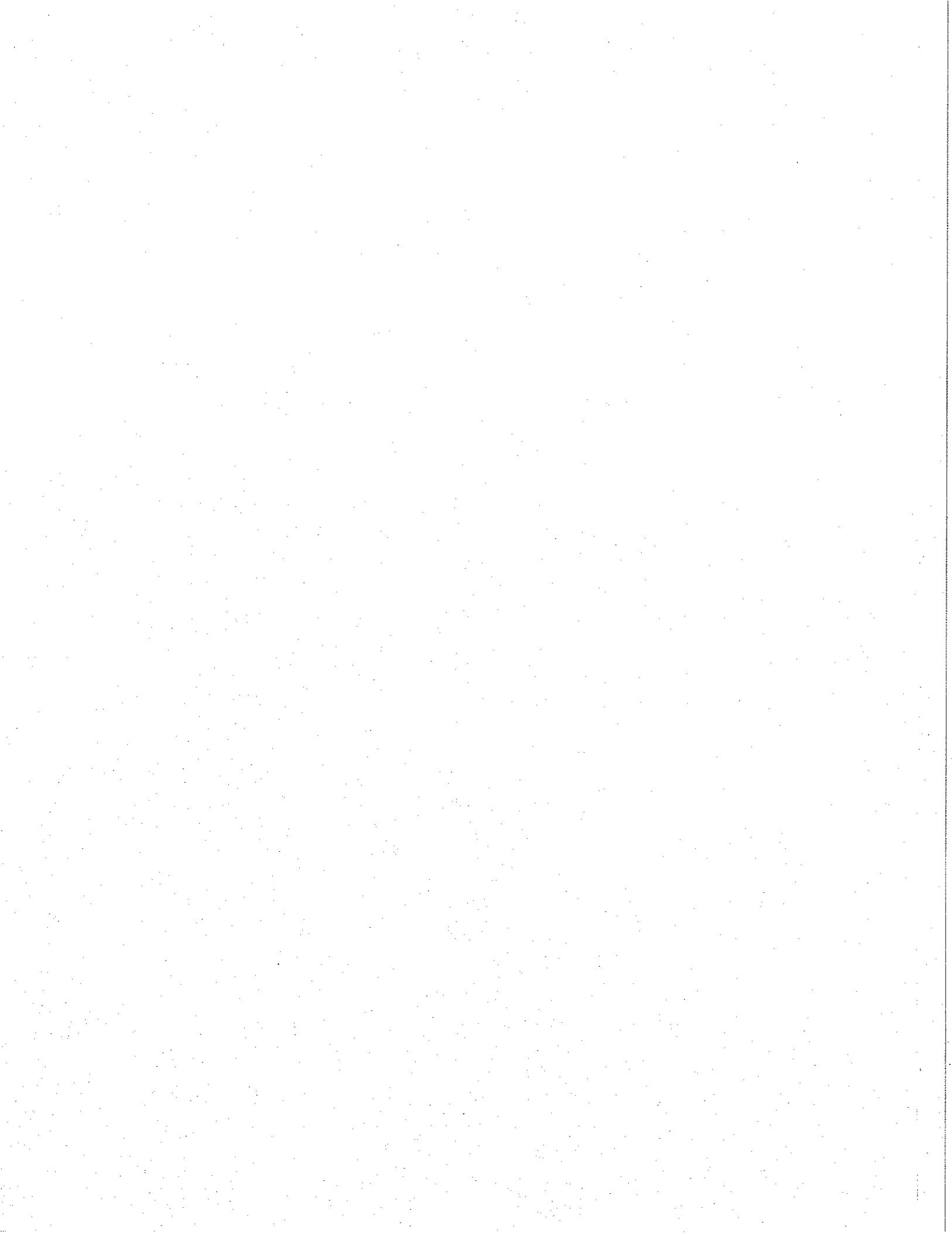
► *Upper Air Shelter, 1956, LN00-236*

This upper air shelter is recommended for reevaluation when it reaches 50 years of age. The structure may be potentially eligible under *Criterion C: Engineering* as an intact example of technology developed by the U.S. Weather Bureau to be used at airports and as an aid to aviation.



Chapter 4

Recommendations for Phase II



Chapter 4

Recommendations for Phase II

Introduction

Phase II of this project will be a field survey of general aviation airports throughout the state established before 1961. The Nebraska State Historical Society's (NSHS) goal is to document airport facilities that have retained historic resources and tell the history of general aviation in the state. Statewide, the NSHS and the Department of Aeronautics identified approximately 59 airports that were established before 1961. This number excludes former World War II military base airports, current military airfields, and major airports such as Omaha and Lincoln.¹²⁷

The identification of airports for the Phase II field survey began with a questionnaire submitted by the Department of Aeronautics in the summer of 2000. The request for information regarded buildings and structures that were constructed before 1961. Responses were received from most airports, often including detailed histories and historic images. Based on the response to the questionnaire, airports established after 1961 or with no extant pre-1961 historic resources were eliminated from further study. The NSHS and the Department of Aeronautics reduced the number of potential candidates for Phase II field survey to 32. A sample survey of four airports – Beatrice, Hastings, Norfolk, and North Platte – was completed under Phase I of this project. A discussion of the survey results is included in *Chapter 3 – Inventory of Surveyed Properties*.

Pre-field Telephone Survey Results

To gather more information about the potential for historic resources, the remaining 28 airports were the subject of a telephone survey. In March-April 2001, Mead & Hunt contacted the airport managers and/or local officials to learn more about their facilities. Once again managers

were asked about the history of the airport facilities, and in particular, the status and condition of pre-1961 buildings and structures. Questions were targeted with information learned from the previous questionnaire, historic and current airport site plans, information from the Department of Aeronautic's Annual Reports, and historical research. The results of the telephone survey guided Mead & Hunt's efforts to identify candidates for the Phase II field survey.

Based on data gathered, we identified a typology for a typical municipal airport in Nebraska. This typology serves as the basis to compare facilities and identify candidates for Phase II field survey. From our research we found that the typical municipal airport was established in the 1940s-1950s and includes the following resources: an administration building, several hangars dating from a range of years, a beacon, and maintenance building.

Phase II Field Survey

Based on the results of our telephone survey and comparison of the data, we have identified two groups of airports for field survey.

Survey Group 1 – Priority for Phase II Field Survey

Survey Group 1 includes airports that are a priority for field survey. These facilities are understood to have a collection of pre-1961 resources that represent elements of a typical Nebraska airport. Airports in this group will usually include standard plan administration buildings, hangars, and beacons. Airports in Survey Group 1 also include facilities that may not include all the elements of a typical airport complex, but do contain a distinctive or unusual building or structure type that

Recommendations for Phase II

warrants further investigation. Most airports contain a mix of pre- and post-1961 resources and post-1961 resources were only considered for the Phase II survey if they were a distinctive example of a building type. Known historical association was also considered in the selection of airports to field survey. For example, the Ord Airport is dedicated to Evelyn Sharp who flew the first airmail plane in Ord in 1938.

Ten airports have been identified as priorities for Phase II field survey. The historic integrity of the resources at these airports is understood to be good, but this will be verified during the field survey. The following table indicates the airports identified and the potential historic resources that may be documented.

Survey Group 1 – Priority for Phase II Field Survey

Airport Location	Date Established	Potential Historic Resources (pre-1961)
David City	Moved to present site 1944/45	- Standard plan metal administration building - Five hangars - Shop building - Beacon
Ord/Evelyn Sharp Field	1946	- Standard plan metal administration building - Hangar - Beacon
Gothenburg	1946	- Storage, hangar, and office building* - T-hangar - Beacon
Imperial	c. 1949	- Standard plan metal administration building - Old flight service station - Beacon
McCook	1952	- Brick and tile administration building - Hangar - VOR
Rushville	c. 1947	- Standard plan metal administration building - T-hangar - Quonset building - Beacon
Stuart-Atkinson	c. 1948	- Standard plan metal administration building - Hangar - Beacon
Superior	c. 1946	- Standard plan metal administration building - Quonset hangar - Beacon - Windsock

Recommendations for Phase II

Survey Group 1 – Priority for Phase II Field Survey

Airport Location	Date Established	Potential Historic Resources (pre-1961)
Trenton	1946	- Masonry administration building - 7 hangars and/or storage buildings - Beacon
Valentine	1949	- Standard plan metal administration building - Unusual 1929 T-hangar - 2 hangars - Beacon

* The Gothenburg airport manager indicated that this building may be removed in the near future.

Survey Group 2 – Potential Candidates for Phase II Field Survey

Several airports being considered for Phase II field survey contained historic resources but did not have a strong enough concentration to be included in Survey Group 1. For example, a facility may have a c. 1950 administration building, but does not have any hangars or other features from this historic period. If funding and schedule

permits, these airports should be included in the Phase II field survey. Information learned about individual property types will assist in a more complete understanding of the quantity and integrity of aviation-related resources statewide. Five airports are recommended as potential candidates for Phase II field survey. The following table indicates the airports and the potential historic resources that may be documented.

Survey Group 2 – Potential Candidates for Phase II Field Survey

Airport Location	Date Established	Potential Historic Resources (pre-1961)
Creighton	c. 1945	- Abandoned administration building - Beacon
Fremont	c. 1942	- 1965 brick administration building - 4 hangars
Gordon	c. 1943	- Administration building (date unknown) - 2 hangars - beacon
Neligh	1948	- Concrete block administration building - Older hangar with new siding - Beacon

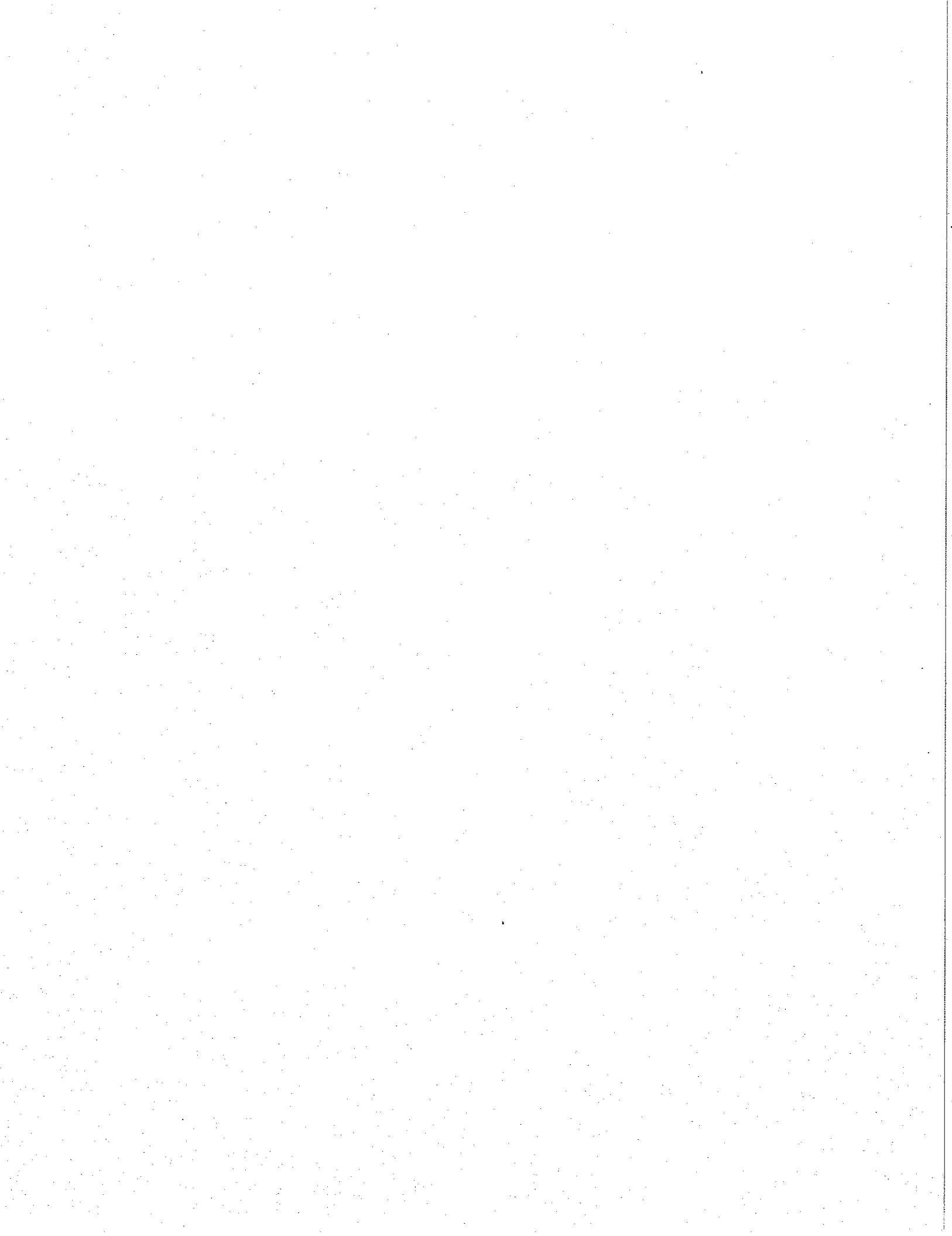
Recommendations for Phase II

Survey Group 2 – Potential Candidates for Phase II Field Survey

Airport Location	Date Established	Potential Historic Resources (pre-1961)
Wayne*	c. 1940	- Administration building c.1963 - several hangars - beacon

*The Wayne Airport served as a training facility for cadets before World War II.

Notes



Notes

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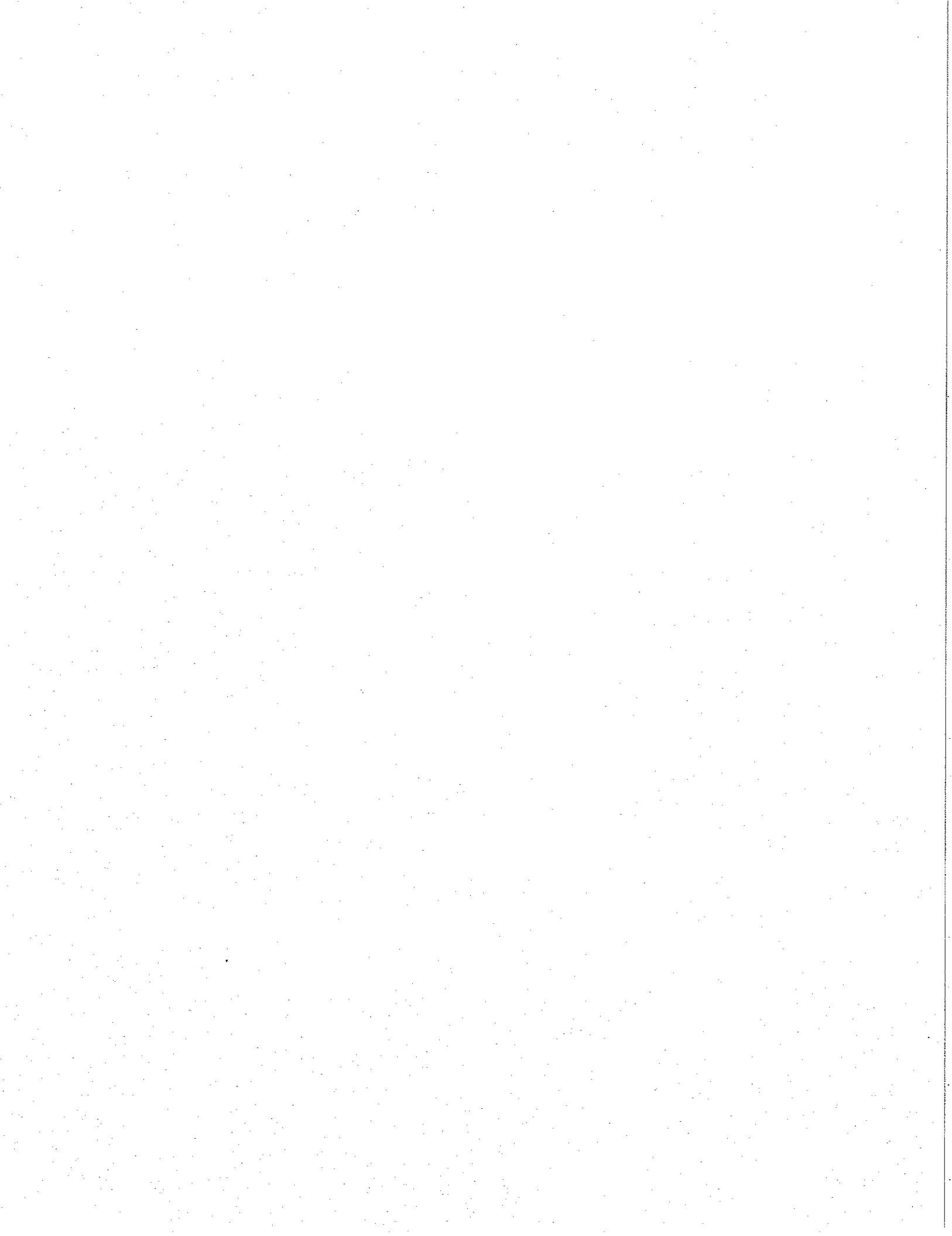
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62. "CPT Excepted From Ban on Sale of Light Craft," *Civil Aeronautics Journal* 3, No. 6 (1942): 73.
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81. O'Keefe, 43.
82. Nebraska Department of Aeronautics, *Annual Report, 1947*, 13; Nebraska Department of Aeronautics, *Annual Report of the Nebraska Department of Aeronautics, 1949*, (Published by the State, 1949), 4; Timmons 17-18.
83. Timmons, 77-78.
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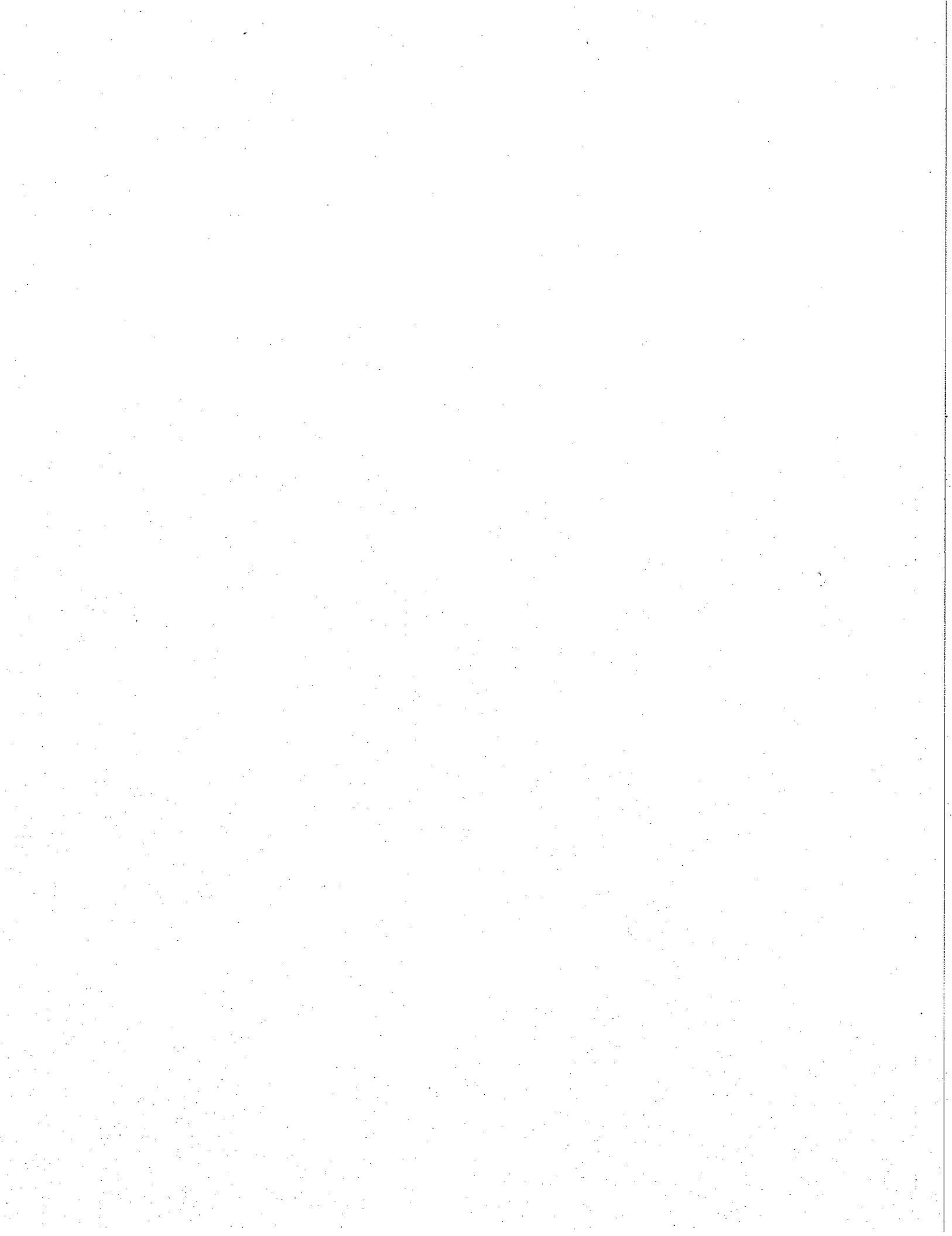
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101. Timmons, 100-101.
102. Timmons, 102.
103. Curt Merrihew, "Nebraska Flying Farmers & Ranchers," *PIREPS (Pilot Reports)* 9, No. 8 (September 1955): 7; Nebraska Department of Aeronautics, *Annual Report of the Nebraska Department of Aeronautics, 1955*, 52.
104. Timmons, 13-14; Bennett, Millard L. "Aviation Safety." *PIREPS (Pilot Reports)* 9, No. 8 (September 1955): 2.
105. Timmons, 14.
106. Timmons, 15.
107. Timmons, 69-70.
108. Timmons, 71-73.
109. Standard plan information was gathered from research and review of plans in the collection of the Nebraska Department of Aeronautics. The discussion of standard plans is limited to those plans identified in the collection of the Nebraska Department of Aeronautics; however, additional standard plans were likely to have been developed.

110. Information the Steelox Company from <http://www.steelo.com>, accessed 11 April 2001.
111. Information adapted from *National Register Bulletin: Guidelines for Evaluating and Documenting Historic Aviation Properties* (U.S. Department of the Interior, National Park Service, National Register of Historic Places, 1998).
112. When possible, Mead & Hunt assigned dates of construction from architectural plans or project documents; in other cases circa dates were provided by airport managers.
113. "Airport history," (N.p., n.d.), 2-8, available at the Beatrice Municipal Airport.
114. "Airport history," 6, 18.
115. "Beatrice Municipal Airport History," (N.p., n.d.), 1, available at the Beatrice Municipal Airport; "Airport history," 6; Beatrice Municipal Airport Board, "Municipal Airport, Beatrice, Nebraska" (Beatrice Chamber of Commerce, July 1943).
116. "District Airport Engineer's Report, Project No. 9-25-031-002, Beatrice Municipal Airport," (Civil Aeronautics Administration, Region V, Airports Division, 1950); "Beatrice Municipal Airport History," 2.
117. Nebraska Aeronautics Commission, *Nebraska Airport Directory* (Department of Aeronautics, 1950), 13; Nebraska Aeronautics Commission, 1953, 12-13; Nebraska Aeronautics Commission, 1969, n.p.; "Beatrice Municipal Airport History," 2-3.
118. W.B. Boucher, District Airport Engineer, letter to S.R. Gilbert, State Airport Engineer, dated 16 October 1950, available at the Nebraska Department of Aeronautics, Lincoln; Harold Hoskins and Associates, architectural plans for the Administration Building, available at the Nebraska Department of Aeronautics, Lincoln.
119. "Airport history," 15-16; "Hangar, Beatrice Airport, 8-21-41," architectural plans, available at the Beatrice Municipal Airport; "Beatrice, 1953," historic photograph of the airport, provided by the Nebraska Department of Aeronautics.
120. Past airport manager dated the construction of the building to 1947; however, a historic photograph dated 1953 and the 1953 *Nebraska Airport Directory* does not show this building. Due to the folding overhead door, which appeared more commonly in the late 1950s and early 1960s, the building is dated to c. 1960.
121. This building is extant but has been severely altered. Originally a two-story house, the second-story was removed; the house has aluminum siding, replacement windows, and a replacement porch and pillar.
122. Nebraska Aeronautics Commission, *Nebraska Airport Directory*, 1950, 57; Nebraska Aeronautics Commission, *Nebraska Airport Directory*, 1953, 54.
123. *Norfolk Daily News*, 9 June 1950, Section F, p. 1, Progress Edition; Norfolk Municipal Airport layout plans (Fifth Regional Office, Airways Engineering Division, Civil Aeronautics Administration, July 12, 1943), available at the Karl Stefan Memorial Airport, Norfolk; Federal Works Agency, Notification of Project Approval, *Karl Stefan Papers*, available at the Nebraska State Historical Society, Lincoln, Nebraska, 2624/1 5.
124. Library Committee of the Elkhorn Valley Historical Society, *Images of America, Norfolk Nebraska* (Chicago: Arcadia Publishing, 2000), 79.

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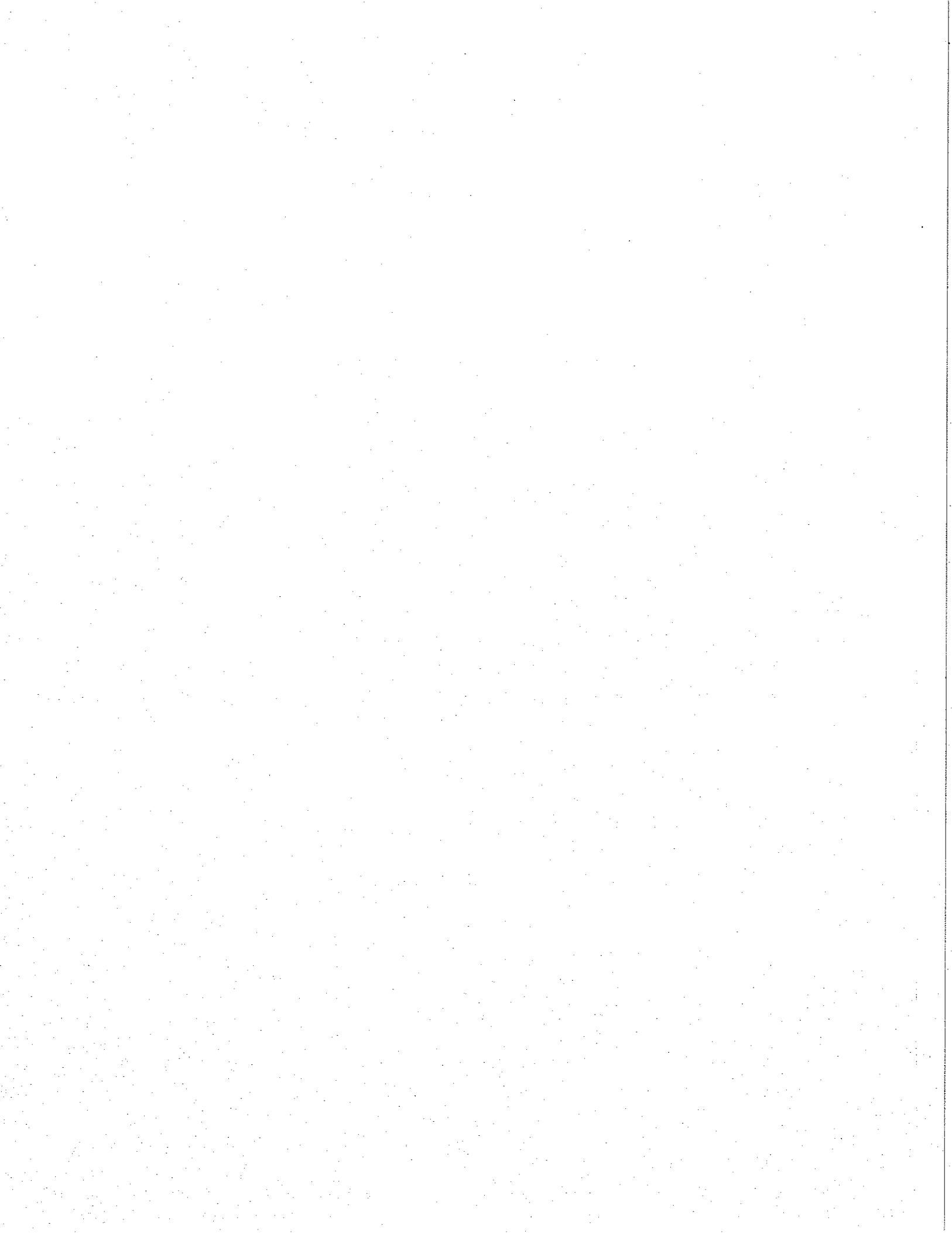
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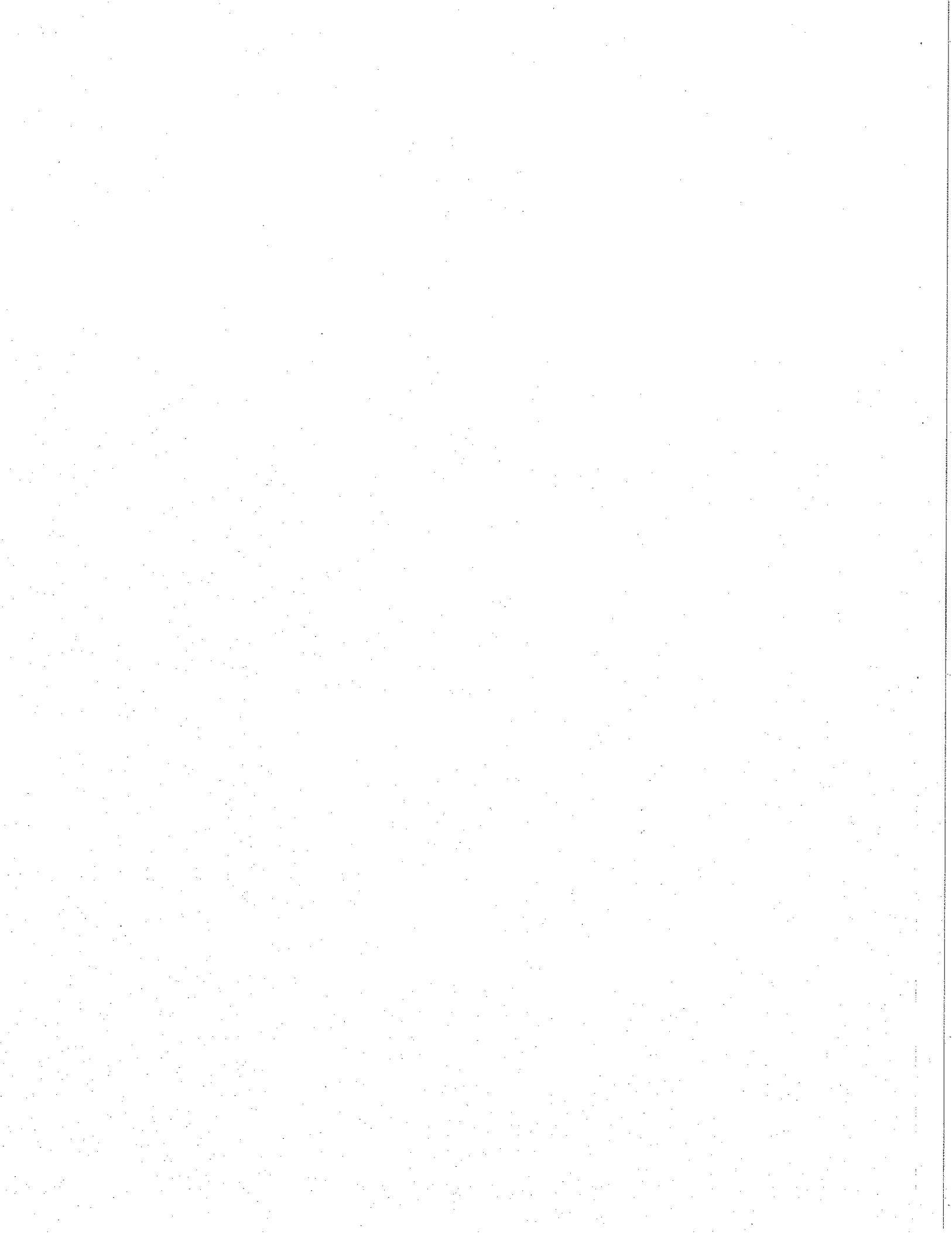
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Appendix 1
State and Federal Aviation Projects in Nebraska
1940-1960



State and Federal Aviation Projects in Nebraska 1940-1960

The Appendix identifies airport projects completed in Nebraska from 1940-1960, including:

- ▶ General airport planning
- ▶ Runway construction
- ▶ Installation of rotary beacons
- ▶ Construction of administration buildings
- ▶ General and continued improvements

The information was compiled from the annual reports of the Nebraska Aeronautics Commission from 1940-1945 and the Nebraska Department of Aeronautics from 1946-1960. The table includes the location of the airport, a brief project description, and an indication of the funding source, if known.

Project descriptions are taken directly from the annual reports and are sometimes vague – only indicating improvements or further development. The annual reports often did not include descriptions of the improvements. A number of reports refer to airport planning activities for airports not yet constructed.

Funding sources for the projects varied between federal, state, and a combination of both, and often included local matching funds. The funding source is noted when this information was available in the annual reports; however, frequently the reports did not make a distinction between federal and state projects versus those funded only with state dollars. Specific federal or state programs such as the WPA, the state hangar program, Nebraska VOR program, or land refund program are cited when this information is available. Federal Aid Projects initiated under the Federal Airport Act of 1946 were completed with federal funds that were matched with state and local funds.

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
<i>Completed in 1940 (January 1 to December 31, 1940)</i>		
Alliance	Additional development, expansion, or improvements.	----
Atkinson	Airport development.	----
Auburn	Airport development.	----
Beatrice	Airport development.	----
Beaver City	Airport development.	----
Big Springs	Construction work on airport and traffic aids.	CAA (Civil Aeronautics Administration)
Blair	Airport development.	----
Brainard	Construction work on airport and traffic aids.	CAA
Brainard	Airport development.	----
Chadron	Additional development, expansion, or improvements.	----
Chambers	Airport development.	----
Clay Center	Airport development.	----
Crete	Airport development.	----
David City	Airport development.	----
Fairbury	Airport development.	----
Fremont	Airport development.	----
Grand Island	Additional development, expansion, or improvements.	----
Grand Island	Construction work on airport and traffic aids.	CAA
Hastings	Additional development, expansion, or improvements.	----
Hays Center	Construction work on airport and traffic aids.	CAA
Hebron	Airport development.	----
Holdrege	Airport development.	----

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Lincoln	Construction work on airport and traffic aids.	CAA
Kearney	Airport development.	---
North Platte	Additional development, expansion, or improvements.	---
North Platte	Construction work on airport and traffic aids.	CAA
Omaha	Construction work on airport and traffic aids.	CAA
Omaha	Additional development, expansion, or improvements.	---
Scottsbluff	Additional development, expansion, or improvements.	---
Sidney	Construction work on airport and traffic aids.	CAA
Tecumseh	Airport development.	---
Tekamah	Airport development.	---
Wayne	Airport development.	---

Completed 1941 to 1943 (January 1, 1941 to July 1, 1943)

Ainsworth	Airport improvements.	State and city
Beatrice	Developed phase of Master Plan (phase of work started was not completed due to Works Progress Administration [WPA] withdrawal, but retained a marked landing strip for emergency landings).	WPA, state, and city
Blair	Airport improvements.	State
Chadron	Airport improvements.	State and city
Crete	Airport improvements.	State (figures incomplete)
Fairbury	Grading work and land acquisition.	State and city
Fremont	WPA completed drainage system and the compacted subgrade base, which put the airport in a usable condition for safe flying.	WPA, National Youth Administration, CAA, state, and city
Hastings	Airport improvements.	State and city
Imperial	Construction of a new Class II airport.	State

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Norfolk	Drainage system completed to within 90 percent of the final phase by the WPA, and CAA paved two runways and enlarged the airport for use as an auxiliary airport by military planes.	WPA, CAA, state, and city
North Platte	Airport improvements.	WPA, CAA, state, and city
Omaha	Airport improvements.	WPA, state, and city
Peru	Airport improvements.	State and city
Scottsbluff	Airport improvements.	State (figures incomplete)
Tecumseh	Airport improvements.	State and city

Completed 1944 to 1945 (July 1943 to May 10, 1945)

Beatrice	Airport improvements.	----
Blair	Airport improvements.	----
Fairbury	Airport improvements.	----
Hastings	Airport improvements.	----
Lincoln (Arrow Airport)	Airport improvements.	----
McCook	Airport improvements.	----
Norfolk	Airport improvements.	----
North Platte	Airport improvements.	----
Omaha	Airport improvements.	----
O'Neill	Airport improvements.	----

Completed in 1946 (July 1, 1945 to June 30, 1946)

Beatrice	Airport improvements.	----
Falls City	Airport improvements.	NAC (Nebraska Aeronautics Commission) and airport bond issues
Fremont	Airport improvements.	----
Gordon	Airport improvements.	NAC
Hastings	Airport improvements.	----
Holdrege	Airport improvements.	NAC
Kimball	Airport improvements.	NAC
McCook	Airport improvements.	----

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Oakland	Airport improvements.	---
Omaha (Clear Ridge)	Airport improvements.	NAC
O'Neill	Airport improvements.	NAC
<i>Completed in 1947 (July 1, 1946 to June 30, 1947)</i>		
Broken Bow	Turf landing strips (3).	State
Falls City	Turf landing strips (2).	State
Holdrege	Turf landing strips (3).	State
Kimball	Turf landing strips (3).	State
Omaha	Turf landing strips (3).	State
Ord	Turf landing strips (2).	State
Rushville	Turf landing strips (3).	State
Wahoo	Turf landing strips (2).	State
York	Turf landing strips (3).	State
<i>Completed in 1948 (July 1, 1947 to June 30, 1948)</i>		
Beatrice	Concrete apron construction.	Federal
Cozad	Turf landing strips (2).	Federal
Fremont	Concrete taxiway construction.	Federal
Hebron	Turf landing strips (3).	Federal
Humboldt	Turf landing strips (2).	Federal
Neligh	Turf landing strips (2).	Federal
Ord	Further development.	State
Rushville	Further development.	State
Stuart-Atkinson	Turf landing strips (2).	Federal
Superior	Turf landing strips (2).	Federal
Trenton	Turf landing strips (2).	Federal
Wayne	Further development.	State
Wilber	Turf landing strips (2).	Federal
14 airports	Additional developments.	Federal and state

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
<i>Completed in 1949 (July 1, 1948 to June 30, 1949)</i>		
Beatrice	Concrete apron and aircraft parking area.	Federal
Columbus	Concrete service and parking apron.	Federal
Cozad	Turf landing strips (2); access road; and a building and parking area.	Federal
Creighton	Turf landing strips (2); access road; and a building and parking area.	Federal
Crete	Turf landing strips (2); access road; and a building and parking area.	Federal
Crete	Further development.	State
David City	Turf landing strips (2); access road; and a building and parking area.	Federal
Fremont	Concrete taxiway connecting the northwest-southeast runway and the existing north-south runway.	Federal
Hartington	Turf landing strips (2); access road; and a building and parking area.	Federal
Hastings	Concrete runway; concrete taxiway; and a concrete service and parking apron.	Federal
Hebron	Turf landing strips (3); access road; and a building and parking area.	Federal
Holdrege	Further drainage development.	Federal
Humboldt	Turf landing strips (2); access road; and a parking area.	Federal
Lexington	Turf landing strip; taxiway; access road; and parking area. Equipment and facilities moved from the old CAA Intermediate Landing Field at Overton.	Federal
Minden	Turf landing strips (2); access road; and a building and parking area.	Federal
Mitchell	Extension of turf landing strip; service and parking apron; access road; and a building and parking area with concrete sidewalk.	Federal
Neligh	Turf landing strip; access road; and a building and parking area.	Federal
Omaha	Concrete runway.	Federal
Omaha	Further development.	State

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Sargent	Turf landing strips (2); access road; and a building and parking area.	Federal
Sidney	Turf landing strip; Class II turf landing strip; access roads; taxiway; and parking area. Equipment and facilities moved from the old CAA Intermediate Landing Field at Sidney.	Federal
Stuart-Atkinson	Turf landing strips (2); access road; and a building and parking area.	Federal
Superior	Turf landing strips (2); access road; and a building and parking area.	Federal
Trenton	Turf landing strips (2); access road; and a building and parking area.	Federal
Valentine	Runways (2); access road; taxiway; and an apron.	Federal
Wilbur	Turf landing strips (2); access road; and a parking area.	Federal
York	Extension of turf landing strips and a one-story brick administrative building.	Federal

Completed in 1950 (July 1, 1949 to June 30, 1950)

Basset	Turf landing strips (2); access road; taxiway; and a building and parking area.	Federal
Bayard	Turf landing strips (2); access road; taxiway; and a building and parking area.	Federal
Blair	One-story concrete block administrative building with full basement; access road; and a parking area.	Federal
Bruning (Former Army Air Base)	Maintenance of runway, taxiways, and aprons.	Federal
Chambers	Turf landing strips (2); access road; taxiway; and a building and parking area.	Federal
Curtis	Stabilized gravel turf taxiway and apron; access road; and a one-story metal administrative building and parking area.	Federal
Fairbury	Preliminary work for soil cement runway; taxiway and apron; and extension of turf runway.	Federal
Fairmont (Former Army Air Base)	Maintenance of runway, taxiways, and aprons.	Federal
Gothenburg	Turf landing strips (2); and a taxiway.	Federal

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Grand Island	High-intensity runway lighting system on the north-south runway.	Federal
Harvard (Former Army Air Base)	Maintenance of runway, taxiways, and aprons.	Federal
Hay Springs	Turf landing strip; access road; taxiway; and a building and parking area.	Federal
Imperial	Turf landing strip; access road; taxiway; and a building and parking area.	Federal
Lincoln	Four-story brick and reinforced-concrete control tower; 51-foot beacon tower with a 36-inch beacon; and a high-intensity runway lighting system on the northwest-southeast runway.	Federal
Norfolk	Bituminous paved access road, parking area, apron extensions, and taxiways.	Federal
Omaha	Extension of concrete runway; heavy-duty concrete taxiways 50 feet wide connecting all runways to the apron; concrete parking area enlargement; and a high-intensity runway lighting system on the northwest-southeast runway.	Federal
Superior	One-story metal administrative building.	Federal
York	One-story brick administrative building.	Federal

Completed in 1951 (July 1, 1950 to June 30, 1951)

Beatrice	One-story brick administrative building; access road; and parking area.	---
Bloomfield	Turfed landing strip; access road; taxiway; and a building and parking area.	---
Chadron	Turfed landing strip; taxiway; and relocation of runway lights.	---
Columbus	Preliminary work for a soil cement runway; taxiway; and an apron.	---
Creighton	Snow fences around turf landing strips.	---
Crete	One-story concrete block administrative building with steel roof and ceiling.	---
Curtis	One-story metal administrative building.	---
David City	One-story metal administrative building.	---

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Grand Island	Pavement maintenance on apron and taxiways; and work on tetrahedron.	----
Fairbury	Soil cement runway; taxiway and apron with double bituminous coat. Beacon tower and double beacon; lighted windsock; and a runway lighting system on the north-south runway.	----
Harrison	Landing strip; access road; taxiway; and a building and parking area.	----
Hartington	One-story metal administrative building.	----
Kearney	Tetrahedron rehabilitation; medium intensity lighting system; flood lights; and a beacon.	----
Lake McConaughy	Turfed landing strip; taxiway; building and parking area; and a one-story metal administrative building.	----
Lexington	Removal and relocation of a power line.	----
Minden	One-story metal administrative building.	----
Neligh	One-story concrete block administrative building.	----
North Platte (Lee Bird Field)	One-story brick administrative building; access road; and concrete taxiway, apron, and sidewalks.	----
Ord	One-story metal administrative building.	----
Scribner State Airport	Water supply system, including a new pumphouse.	----
Stuart-Atkinson	One-story metal administrative building.	----
Wahoo	One-story metal administrative building with pumphouse; and a concrete sidewalk and parking area.	----

Completed in 1952 (July 1, 1951 to June 30, 1952)

Auburn	Rotary beacon.	----
Bassett	One-story metal administrative building.	----
Bloomfield	One-story metal administrative building.	----
Bruning State Airfield	Rotary beacon.	----

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Columbus	Soil cement runway; and double bituminous armor coat apron and taxiways.	---
Curtis	Rotary beacon.	---
David City	Metal-covered storage hanger; and a metal-covered shop hanger with built-up roof and concrete floors.	---
Curtis	"T" hangars (3); rotary beacon; and concrete sidewalks around administrative building.	Land refund project
Gordon	Rotary beacon.	---
Holdrege	Masonry (glazed tile) combination administrative building and shop hangar with concrete floor; access road; vehicle and aircraft parking areas; taxiway; and an apron.	---
Humboldt	Metal-covered combination storage and shop hangar.	Land refund project
Imperial	One-story metal administrative building.	---
Kearney	Rotary beacon and a medium-intensity lighting system.	---
Kimball	Rotary beacon.	---
Lodgepole	Rotary beacon.	---
Minden	Metal-covered combination shop and storage hanger with concrete floor, and a concrete paved aircraft parking apron.	---
Omaha	Repair of damages caused by the high water table as a result of the 1952 Missouri River flood disaster.	State
Omaha	Reinforced-concrete pavement taxiway and taxiway intersection extensions.	Federal
O'Neill	Rotary beacon.	---
Ogallala	Rotary beacon.	---
Ord	Rotary beacon.	---
Rushville	One-story metal administrative building, and a concrete sidewalk.	---
Scottsbluff	Rotary beacon.	---
Sidney	One-story metal administrative building, and extension of the access road.	---

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Trenton	One-story masonry (glazed tile) administration building.	----
Valentine	Rotary beacon.	----
Wayne	Rotary beacon.	----
York	Rotary beacon.	----
<i>Completed in 1953 (July 1, 1952 to June 30, 1953)</i>		
Arthur	Turf landing strip; taxiway; access road; and a building and parking areas.	----
Beatrice	Extension of building area, and concrete paved extensions for the taxiway and apron.	----
Blair	Medium-intensity runway lighting system, and a rotary beacon.	----
Chambers	Metal combination shop and storage hanger with concrete floor.	Land refund project
Creighton	Rotary beacon.	----
Harvard State Airfield	Rotary beacon.	----
Hastings	Medium-intensity runway lighting system.	----
Hay Springs	Medium-intensity runway lighting system, and a rotary beacon.	----
Holdrege	Rotary beacon.	----
Humboldt	Relocation of access road, and construction of a plate arch roadway culvert.	----
Lexington	Gravel surfacing of taxiways and aprons.	----
McCook	Stabilized aggregate runway with concrete starter strips; a medium-intensity runway lighting system; and concrete paving for an apron, taxiway, and sidewalk.	----
Mitchell	One-story metal administration building; concrete sidewalk; and extension of the vehicle parking area.	----
North Platte	Fire well and incinerator; apron flood lights; and concrete paving for equipment parking apron in front of administration building.	----
Omaha	Removal of existing 6-inch concrete east-west taxiway between the apron and north-south runway, and replacement with 13 $\frac{1}{2}$ -inch reinforced-concrete paved taxiway.	----

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Scribner State Airfield	Rotary beacon.	----
Valentine	One-story metal administration building; and a medium-intensity runway lighting system. (This is the first large metal administration building to be constructed within the state.)	----
Wahoo	Concrete taxiways and apron; and a crushed rock access road.	----
Wallace	Turfed landing strip; taxiway; access road; building and parking areas.	----
York	Medium-intensity runway lighting system; concrete paving for the apron; and repairs to hangar and sidewalks.	----

Completed in 1954 (July 1, 1953 to June 30, 1954)

Ainsworth	Medium-intensity runway lighting system; complete remodeling of administration building; and a concrete sidewalk from administration building to hangar.	----
Columbus	Medium-intensity runway lighting system.	----
Gothenburg	Medium intensity runway lighting system	----
Lake McConaughy State Airport	Experimental Grimes continuous flashing beacon, and an experimental "flying Farmer" low-intensity runway lighting system.	----
Linoma Beach	Rotary beacon.	----
McCook	Modern brick and glazed tile administration building with concrete sidewalk; stabilized aggregate runway with concrete starter strips; 4-place multiple all metal storage hangar; medium-intensity runway lighting system; and a rotary beacon.	----
Neligh	Rotary beacon.	----
North Platte	Additional concrete apron facilitating the movement and parking of aircraft at the terminal building.	----
Omaha	Concrete paved aircraft parking apron north of the terminal building, and a passenger concourse from the terminal building north with three exit gates on the new aircraft parking apron.	----

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Scottsbluff	One-story brick administration building with restaurant, and an ornamental chain-link fence separating the administration building and car parking areas from the aircraft parking area.	----
Trenton	Medium-intensity runway lighting system	----
<i>Completed in 1955 (July 1, 1954 to June 30, 1955)</i>		
Ainsworth	Visual-Omni-Range (VOR) installation. (This is the first service of its kind in the United States to be installed by a state agency.)	Nebraska VOR Program
Alliance	VOR installation.	Nebraska VOR Program
Beatrice	VOR installation.	Nebraska VOR Program
Blair	Administration building remodeling.	----
Cozad	Medium-intensity runway lighting system, rotating beacon, and tower.	----
Creighton	Two-unit multiple "T" hangar with 12-foot office and shop extension.	Nebraska State Hangar Program
Hebron	Three-unit multiple "T" hangar with 16-foot shop extension.	Nebraska State Hangar Program
Holdrege	Medium-intensity runway lighting system, rotating beacon, and tower.	----
Kearney	VOR installation.	Nebraska VOR Program
McCook	VOR installation.	Nebraska VOR Program
Merriman (Cole Memorial Airport)	Turfed runway; and bituminous surfaced taxiway, apron, and access road.	----
Merriman (Cole Memorial Airport)	Three-unit multiple "T" hangar with 16-foot shop extension.	Nebraska State Hangar Program
Minden	Medium-intensity runway lighting system, rotating beacon, and tower.	----
Norfolk	VOR installation.	Nebraska VOR Program
Norfolk	Maintenance of runways, taxiways, apron, and access road.	----

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
North Platte	Chain-link fencing around administration building area; storm sash and screen doors on administration building; concrete curb and gutter for the access road; and a concrete pipe and catch basin for the access road.	----
Omaha	Control tower addition to the administrative building creating an additional office floor.	----
Scottsbluff	Bituminous surfacing of 1.13 miles of access road.	----
Scottsbluff	54-foot by 50-foot shop hangar.	Nebraska State Hangar Program
Sidney	One, five-unit multiple "T" hangar, and one, three-unit multiple "T" hangar.	Nebraska State Hangar Program
Stuart-Atkinson	Four-unit multiple "T" hangar with 16-foot shop extension.	Nebraska State Hangar Program

Completed in 1956 (July 1, 1955 to June 30, 1956)

Auburn	Turfed landing strip and taxiway; medium-intensity runway lighting system; rotating beacon; and a tower.	----
Beatrice	Medium-intensity runway lighting systems for the north-south and northwest-southeast paved runways and taxiway, including installation of daytime boundary markers; rotating beacon; and a tower.	----
Gordon	Bituminous surfaced runway, taxiway, and apron.	----
Holdrege	Concrete apron in front of office and shop hangar.	----
Kimball	Medium-intensity runway lighting system, rotating beacon, and tower.	----
North Platte (Lee Bird Field)	100-foot extension to the southeast end of the concrete runway; concrete entrance road; medium-intensity runway lighting system on the northwest-southeast runway; rotating beacon; and a tower.	----
Sargent	Three-unit multiple "T" hangar.	Nebraska State Hangar Program
Scottsbluff	Five-unit multiple "T" hangar.	Nebraska State Hangar Program

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Sidney	Concrete runway and taxiway; and a sizable expansion of the concrete apron.	----
Valentine	Bituminous surfaced apron area expansion; connection of taxiway to northeast-southwest runway; and widening the taxiway of the northwest-southeast runway.	----

Completed in 1957 (July 1, 1956 to June 30, 1957)

Auburn	Three-unit multiple "T" hangar.	Nebraska State Hangar Program
Chadron	Concrete starter strips on runway and apron.	----
Gothenburg	Concrete starter strips on the ends of the landing strip, and a concrete taxiway connecting to the southwest end of the landing strip.	----
Hastings	Concrete feeder taxiway from the apron to the hangar area.	----
Holdrege	Concrete taxiway connecting the apron with the landing strip, and paving of area in front of the gas pump.	----
McCook	Asphaltic concrete surfacing between existing concrete starter strips on the runway.	----
Mitchell	Four-unit multiple "T" hangar.	Nebraska State Hangar Program
Omaha	Light-duty parking apron and taxiway in the fixed-base operator's area, and heavy-duty taxiway paving south from the administration building.	----
Republican City	Turfed landing strip.	----
Wayne	Turfed landing strips (2), and a medium-intensity lighting system for the northeast-southwest landing strip and taxiway.	----

Completed in 1958 (July 1, 1957 to June 30, 1958)

Auburn	Additional unit multiple "T" hangar.	Nebraska State Hangar Program
Broken Bow	Turfed landing strip and taxiway; lighting; clear-green beacon; and paving of a small apron at the shop hangar.	Federal

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Fairbury	Addition to the existing administration building, including a new low flat roof, sidewalks, and fencing.	State
Falls City	Lighting of the northwest-southeast landing strip; clear-green beacon; and a lighted wind indicator.	Federal
Gordon	Four-unit multiple "T" hangar with shop.	Nebraska State Hangar Program
Grant	Turf landing strip; taxiway; apron; access road; and parking area.	Federal
Omaha	Pavement of a connecting taxiway to the light-duty apron, and installation of a controllable lighted wind "T."	Federal
Ord	Four-unit "T" hangar.	Nebraska State Hangar Program
Oshkosh	Turfed landing strip and taxiway.	Federal
Sargent	Lighting for the northwest-southeast landing strip; lighted wind cone; clear-green beacon; and a tower.	Federal
Scottsbluff	Medium-intensity elevated lights for the northwest-southeast runway; and rehabilitation of the tetrahedron, electrical vault, controls, and rotary beacon.	Federal
Scribner-State	Clear-green beacon; tower; lighting for the north-south runway; and pavement of the connecting taxiway from the north-south runway to the open area.	Federal
Sidney	Widening and extension of the northwest-southeast runway, taxiway, and apron.	Federal
Springview	Turf landing strip and apron; and a gravel access road and parking area.	Federal
York	Turfed runway, taxiway, and apron.	Federal

Completed in 1959 (July 1, 1958 to June 30, 1959)

Beatrice	Expansion of the northwest-southeast concrete runway and apron area; and extension of the medium-intensity lighting system on the northwest-southeast runway	Federal
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State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Gordon	Steelox metal administrative building. (This building was donated by the state, but all construction was done by the city.)	State
Grand Island	Addition to the terminal building in connection with a restaurant; concrete taxiway from the terminal apron to the north-south runway; entrance road; and taxiway entrance lights.	Federal
Hastings	Six-unit multiple "T" hangar.	Nebraska State Hangar Program
Holdrege	Three-unit multiple "T" hangar.	Nebraska State Hangar Program
Imperial	Bituminous armor coat northwest-southeast runway; apron extension; and a connecting taxiway.	Federal
Norfolk	Medium-intensity elevated lighting system on the northwest-southeast and northeast-southwest runways, and lighting of the taxiway from the northeast-southwest runway to the apron, including control equipment.	Federal
Omaha	Land acquisition for clear zones for the northwest-southeast runway, and additional land in the northwest approach zone for future installation of an approach lighting system.	Federal
Omaha	Pavement repairs.	State
O'Neill	One-story masonry administrative building; parking area; and an entrance road.	Federal
Valentine	Bituminous sand surface course and seal coat northwest-southeast runway expansion and apron; and a medium-intensity lighting system extension on the northwest-southeast runway.	Federal
Republican City	Turf north-south landing strip.	State

Completed in 1960 (July 1, 1959 to June 30, 1960)

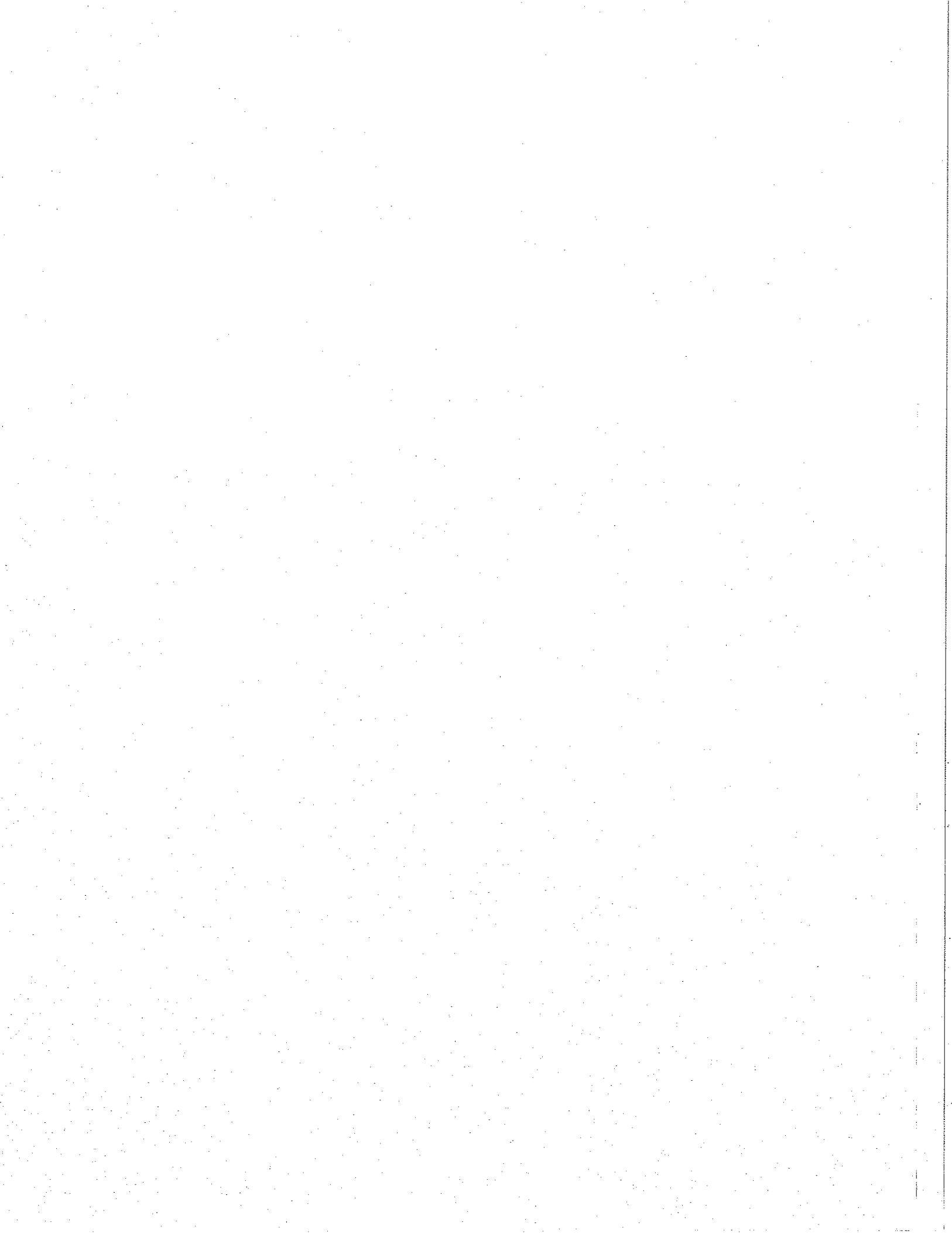
Alliance	Six-unit multiple "T" hangars.	Nebraska State Hangar Program
Alliance	Masonry administrative building, concrete sidewalks, and apron floodlighting.	Federal

State and Federal Aviation Projects in Nebraska 1940-1960

Location	Project Description	Funding Source
Broken Bow	Concrete paving for the northwest-southeast runway, taxiways, and additional apron.	Federal
Cambridge	Six-unit multiple "T" hanger.	Nebraska State Hangar Program
Columbus	Storage hangar.	Nebraska State Hangar Program
Falls City	Five-unit multiple "T" hangar.	Nebraska State Hangar Program
Gothenburg	Extension to the southwest end of the northwest-southeast landing strip.	Federal
Hastings	Installation of new fire hydrants in the building and operational areas, and extension of a water line to the airport.	Federal
Holdrege	Concrete turnarounds at the north-south runway ends; extension of apron and taxiway; and extension of existing medium-intensity lighting system.	Federal
Gordon	Land acquisition for future runway extension.	Federal
Lincoln	Eighteen-unit multiple "T" hangar.	Nebraska State Hangar Program
Norfolk	Four-unit multiple "T" hangar.	Nebraska State Hangar Program
Omaha	Obstruction lights and land acquisition.	Federal

Appendix 2

Glossary of Architectural and Aviation Terms



Glossary of Architectural and Aviation Terms

Association. Link of a historic property with a historic event, activity, or person. Also, the quality of integrity through which a historic property is linked to a particular past time and place.

Building. A building is erected to house activities performed by people.

Circa or Ca. At, in, or of approximately, used especially with dates.

Contributing (National Register definition). A building, site, structure, or object that adds to the historic associations, historic architectural qualities for which a property is significant. The resource was present during the period of significance, relates to the documented significance of the property, and possesses historic integrity, or is capable of yielding important information about the period.

Design. Quality of integrity applying to the elements that create the physical form, plan, space, structure, and style of a property.

Eligible. Properties that meet the National Park Service Criteria for nomination and listing on the National Register.

Evaluation. Process by which the significance and integrity of a historic property are judged and eligibility for National Register listing is determined.

Extant. Still standing or existing (as in a building, structure, site, and/or object).

Feeling. Quality of integrity through which a historic property evokes the aesthetic or historic sense of past time and place.

Historic context. The concept used to group related historic properties based upon a theme, a chronological period, and/or a geographic area.

Integrity. Authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic period.

Location. Quality of integrity retained by a historic property existing in the same place as it did during the period of significance.

Materials. Quality of integrity applying to the physical elements that were combined or deposited in a particular pattern or configuration to form a historic property.

"Multi-T" hangar. A hangar building constructed with individual spaces, many in "T" shapes, to store planes.

Glossary of Architectural and Aviation Terms

National Register of Historic Places (National Register). The official federal list of districts, buildings, sites, structures, and objects significant in American history, architecture, archaeology, engineering, and culture that are important in the prehistory or history of their community, state, or nation. The program is administered through the National Park Service by way of State Historic Preservation Offices.

National Register of Historic Places Criteria. Established criteria for evaluating the eligibility of properties for inclusion in the National Register.

Noncontributing (National Register definition). A building, site, structure, or object that does not add to the historic architectural qualities or historic associations for which a property is significant. The resource was not present during the period of significance; does not relate to the documented significance of the property; or due to alterations, disturbances, additions, or other changes, it no longer possesses historic integrity nor is capable of yielding important information about the period.

Object. An artistic, simple, and/or small-scale construction not identified as a building or structure; i.e., historic signs, markers, and monuments.

Period of significance. Span of time in which a property attained the significance for which it meets the National Register criteria.

Potentially eligible. Properties that may be eligible for listing on the National Register pending further research and investigation.

Property. A building, site, structure, and/or object situated within a delineated boundary.

Property type. A classification for a building, structure, site, or object based on its historic use or function.

Quonset hangar. A hangar developed from a Quonset hut or based on the Quonset hut design originally developed for military use just prior to World War II. The Quonset hut was designed as a temporary, prefabricated, light-weight shelter that could be shipped anywhere and quickly assembled. The half-tubular building was crafted of ribbed galvanized steel sheathing placed over a frame of lightweight steel arch ribs.

Rotating beacon and tower. A visual navigational aid operated at many airports. At civil airports, alternating white-and-green flashes indicate the location of the airport. At military airports, the beacons flash alternately white and green, but are differentiated from civil beacons by dual-peaked (two quick) white flashes between the green flashes. The beacon rests on a metal pyramidal tower.

Glossary of Architectural and Aviation Terms

Segmented circle. A system of visual indicators designed to provide traffic pattern information at airports without operating control towers. This structure consists of approximately 15 metal ground markers approximately 2 ½ feet high, constructed in an "A"-shaped configuration and covered with corrugated metal. The ground markers are painted alternating colors of red and white. The color scheme indicates approach and takeoff directions.

Setting. Quality of integrity applying to the physical environment of a historic property.

Significance. Importance of a historic property as defined by the National Register criteria in one or more areas of significance.

Site. The location of a prehistoric or historic event.

Tetrahedron. A device normally located on uncontrolled airports and used as a landing direction indicator. The small end of a tetrahedron points in the direction of landing. The structure consists of three intersecting corrugated metal pieces that represent the shape of an airplane. The structure turns atop a metal pole, indicating wind direction.

Visual Omni Range (VOR). A ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees. VOR navigational systems were first installed in Nebraska in 1948. VOR navigation systems helped to increase the capacity of airways by allowing pilots to visually check their course, rather than having to listen to a signal in a headset.

Windsock pole. A metal pole approximately 20 feet high with four lights extending from the top. An orange windsock is attached to the pole to indicate wind direction.

Workmanship. Quality of integrity applying to the physical evidence of the crafts of a particular culture, people, or artisan.

